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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lisa V. Cook Examiner #: 77134 Date: 3/13/03
 Art Unit: 1641 Phone Number 305-0808 Serial Number: 071273169
 Mail Box and Bldg/Room Location: CM1 7e12 Results Format Preferred (circle): PAPER DISK E-MAIL
YKCL CM1 7B-17

If more than one search is submitted, please prioritize searches in order of need. MEJ

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Compositions and methods for Early Pregnancy Diagnosis
 Inventors (please provide full names): Robert Michael Roberts, Jonathan Andrew Green, Sanchai Xie.

Earliest Priority Filing Date: 3/20/98

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Sequence Search + Interference Search
 for Seq. Id. NO: 32 BOPAG 9.
 bovine pregnancy associated antigen.

Please also see attached claims + bib sheet.

Thanks, ☺
 Lisa C.

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MAR 13 2003

(STIC)

Point of Contact:
 Toby Port
 Technical Info. Specialist
 CM1 6A04
 703-308-3534

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Type of Search		Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN <u>274</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>3/17</u>	Bibliographic _____	Dr. Link _____
Date Completed: <u>3/17</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>10</u> <u>20</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>10</u> <u>24</u> <u>90</u>	Other _____	Other (specify) _____

PTO-1590 (8-01)

=> file caplus; d que 117; d que 118; d que 119; d que 124; d que 127
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FILE COVERS 1907 - 2 Apr 2003 VOL 138 ISS 14
 FILE LAST UPDATED: 1 Apr 2003 (20030401/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT
L16	25	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	TEST KITS/CT (L) PREGN?
L17	2	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L16 AND (L6 OR L7 OR L8)

L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L11	47611	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY/CT
L18	2	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L5 AND L11

L3	46	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY (5A) ASSOCIAT? (2A)
						ANTIGEN
L4	58733	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PAG#
L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT
L10	860	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	GLYCOPROTEINS/CW (L) PREGNAN?
L14	23	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	(L3 OR L4 OR L5) AND (L6 OR L7 OR L8) AND L10.
L19	4	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L14 AND BIOCHEMICAL METHODS/SC, SX

L3	46	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY (5A) ASSOCIAT? (2A)
						ANTIGEN
L4	58733	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PAG#
L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT

L10 860 SEA FILE=CAPLUS ABB=ON PLU=ON GLYCOPROTEINS/CW (L) PREGNAN?
 L20 4414 SEA FILE=CAPLUS ABB=ON PLU=ON EARLY PREGN?
 L24 15 SEA FILE=CAPLUS ABB=ON PLU=ON (L3 OR L4 OR L5) AND (L6 OR L7
 OR L8) AND L10 AND L20

L3 46 SEA FILE=CAPLUS ABB=ON PLU=ON PREGNANCY (5A) ASSOCIAT? (2A)
 ANTIGEN
 L4 58733 SEA FILE=CAPLUS ABB=ON PLU=ON PAG#
 L5 5 SEA FILE=CAPLUS ABB=ON PLU=ON BOPAG?
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 L7 3046 SEA FILE=CAPLUS ABB=ON PLU=ON RUMINANT/CT
 L8 66 SEA FILE=CAPLUS ABB=ON PLU=ON BOVIDAE/CT
 L20 4414 SEA FILE=CAPLUS ABB=ON PLU=ON EARLY PREGN?
 L25 15 SEA FILE=CAPLUS ABB=ON PLU=ON (L3 OR L4 OR L5) AND (L6 OR L7
 OR L8) AND L20
 L27 11 SEA FILE=CAPLUS ABB=ON PLU=ON L25 AND (CONCEPTUS OR EARLY OR
 RETINOL OR ALPHA)/TI

=> s 117 or 118 or 119 or 124 or 127
 L74 17 L17 OR L18 OR L19 OR L24 OR L27

=> file medline; d que 133; d que 137; d que 140
 FILE 'MEDLINE' ENTERED AT 18:21:46 ON 02 APR 2003

FILE LAST UPDATED: 2 APR 2003 (20030402/UP). FILE COVERS 1958 TO DATE.

On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2003 vocabulary. See <http://www.nlm.nih.gov/mesh/summ2003.html>
 for a description on changes.

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L28 209481 SEA FILE=MEDLINE ABB=ON PLU=ON CATTLE/CT
 L29 1227 SEA FILE=MEDLINE ABB=ON PLU=ON RUMINANTS/CT
 L31 25 SEA FILE=MEDLINE ABB=ON PLU=ON PREGNANCY ANTIGEN/CN
 L33 0 SEA FILE=MEDLINE ABB=ON PLU=ON (L28 OR L29) AND L31

L37 4 SEA FILE=MEDLINE ABB=ON PLU=ON BOPAG?

L28 209481 SEA FILE=MEDLINE ABB=ON PLU=ON CATTLE/CT
 L29 1227 SEA FILE=MEDLINE ABB=ON PLU=ON RUMINANTS/CT
 L30 15151 SEA FILE=MEDLINE ABB=ON PLU=ON PREGNANCY, ANIMAL/CT
 L32 365111 SEA FILE=MEDLINE ABB=ON PLU=ON GLYCOPROTEINS+NT/CT
 L35 493184 SEA FILE=MEDLINE ABB=ON PLU=ON EARLY
 L36 257 SEA FILE=MEDLINE ABB=ON PLU=ON (L28 OR L29) AND L30 AND L35
 L40 10 SEA FILE=MEDLINE ABB=ON PLU=ON (L28 OR L29) AND L36 AND L32

=> s 137 or 140
 L75 14 L37 OR L40

=> file embase; d que 150

FILE 'EMBASE' ENTERED AT 18:22:27 ON 02 APR 2003

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FILE COVERS 1974 TO 27 Mar 2003 (20030327/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

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L41      79000 SEA FILE=EMBASE ABB=ON  PLU=ON  CATTLE+NT/CT
L42     116792 SEA FILE=EMBASE ABB=ON  PLU=ON  BOVIDS+NT/CT
L43      10131 SEA FILE=EMBASE ABB=ON  PLU=ON  PREGNAN? (5A) EARLY
L45     149810 SEA FILE=EMBASE ABB=ON  PLU=ON  GLYCOPROTEIN+NT/CT
L46         52 SEA FILE=EMBASE ABB=ON  PLU=ON  PREGNANCY (3A) ASSOCIATED (3A)
          ANTIGEN
L47         3 SEA FILE=EMBASE ABB=ON  PLU=ON  BOPAG?
L49        11 SEA FILE=EMBASE ABB=ON  PLU=ON  (L41 OR L42) AND L43 AND (L45
          OR L46 OR L47)
L50         4 SEA FILE=EMBASE ABB=ON  PLU=ON  L49 AND (PAG OR EARLY)/TI
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=> file biosis; d que 160; d que 161; d que 162; d que 164

FILE 'BIOSIS' ENTERED AT 18:22:48 ON 02 APR 2003

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FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNS) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 26 March 2003 (20030326/ED)

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L51      87052 SEA FILE=BIOSIS ABB=ON  PLU=ON  CATTLE
L52     12088 SEA FILE=BIOSIS ABB=ON  PLU=ON  RUMINANT
L53     479700 SEA FILE=BIOSIS ABB=ON  PLU=ON  BOVID? OR BOVINE
L55         5 SEA FILE=BIOSIS ABB=ON  PLU=ON  BOPAG?
L58     10179 SEA FILE=BIOSIS ABB=ON  PLU=ON  PREGN? (5A) EARLY
L60         1 SEA FILE=BIOSIS ABB=ON  PLU=ON  (L51 OR L52 OR L53) AND L58
          AND L55
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L51      87052 SEA FILE=BIOSIS ABB=ON  PLU=ON  CATTLE
L53     479700 SEA FILE=BIOSIS ABB=ON  PLU=ON  BOVID? OR BOVINE
L57        69 SEA FILE=BIOSIS ABB=ON  PLU=ON  PREGNANCY (3A) ASSOCIATED (3A)
          ANTIGEN
L61         2 SEA FILE=BIOSIS ABB=ON  PLU=ON  L51 AND L53 AND L57
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L55         5 SEA FILE=BIOSIS ABB=ON  PLU=ON  BOPAG?
L62         4 SEA FILE=BIOSIS ABB=ON  PLU=ON  L55 NOT RABBIT/TI
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L51      87052 SEA FILE=BIOSIS ABB=ON  PLU=ON  CATTLE
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L52 12088 SEA FILE=BIOSIS ABB=ON PLU=ON RUMINANT
 L53 479700 SEA FILE=BIOSIS ABB=ON PLU=ON BOVID? OR BOVINE
 L54 95490 SEA FILE=BIOSIS ABB=ON PLU=ON GLYCOPROTEIN?
 L58 10179 SEA FILE=BIOSIS ABB=ON PLU=ON PREGN? (5A) EARLY
 L63 29 SEA FILE=BIOSIS ABB=ON PLU=ON (L51 OR L52 OR L53) AND L54
 AND L58
 L64 17 SEA FILE=BIOSIS ABB=ON PLU=ON L63 AND (EARLY OR DIAGNOSIS OR
 SPECIFIC OR PAG OR OPAG OR GLYCOSYL? OR RUMINANTS)/TI

=> s 160 or 161 or 162 or 164
 L76 22 L60 OR L61 OR L62 OR L64

=> file wpids; d que 167; d que 169; d que 173
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FILE LAST UPDATED: 2 APR 2003 <20030402/UP>
 MOST RECENT DERWENT UPDATE: 200322 <200322/DW>
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L67 1 SEA FILE=WPIDS ABB=ON PLU=ON BOPAG?

L69 0 SEA FILE=WPIDS ABB=ON PLU=ON PREGNANCY (3A) ASSOCIATED (3A)
ANTIGEN

L65 22777 SEA FILE=WPIDS ABB=ON PLU=ON CATTLE OR COW OR RUMINANT OR
 BOVINE OR BOVID?
 L66 215 SEA FILE=WPIDS ABB=ON PLU=ON PREGN? (5A) EARLY
 L70 31 SEA FILE=WPIDS ABB=ON PLU=ON L65 AND L66
 L72 16 SEA FILE=WPIDS ABB=ON PLU=ON L70 AND (DOMESTIC OR FARM OR
 SERUM OR LABEL OR POLYPEPTIDES OR MONOCLONAL OR MILK)/TI
 L73 13 SEA FILE=WPIDS ABB=ON PLU=ON L72 NOT (HYBRIDOMA OR CONGLUTIN?
 OR MUS)/TI

=> s 167 or 173
 L77 13 L67 OR L73

=> dup rem 175 174 150 176 177
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PROCESSING COMPLETED FOR L74
PROCESSING COMPLETED FOR L50
PROCESSING COMPLETED FOR L76
PROCESSING COMPLETED FOR L77
L78 56 DUP REM L75 L74 L50 L76 L77 (14 DUPLICATES REMOVED)
ANSWERS '1-14' FROM FILE MEDLINE
ANSWERS '15-28' FROM FILE CAPLUS
ANSWERS '29-32' FROM FILE EMBASE
ANSWERS '33-44' FROM FILE BIOSIS
ANSWERS '45-56' FROM FILE WPIDS

=> d ibib ab 178 1-56

L78 ANSWER 1 OF 56 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 2003021392 IN-PROCESS
DOCUMENT NUMBER: 22415929 PubMed ID: 12527076
TITLE: Double radial immunodiffusion as a tool to identify pregnancy-associated glycoproteins in ruminant and nonruminant placentae.
AUTHOR: El Amiri Bouchra; Melo de Sousa Noelita; Mecif Khira; Desbuleux Henri; Banga-Mboko Henri; Beckers Jean Francois
CORPORATE SOURCE: Department of Physiology of Reproduction, Faculty of Veterinary Medicine, University of Liege, Bd de Colonster No. 20 B41, B4000, Sart Tilman, Belgium.
SOURCE: THERIOGENOLOGY, (2003 Mar) 59 (5-6) 1291-301.
Journal code: 0421510. ISSN: 0093-691X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20030116
Last Updated on STN: 20030116

AB Pregnancy-associated glycoproteins (PAGs) are antigens synthesized in the superficial layers of the ruminant trophoblast. Initially, they were identified either as proteins released into the maternal bloodstream (where they have applications in pregnancy diagnosis) (PAG1) or as molecules binding to the LH receptor (PAG2). In this study, double radial immunodiffusion was used to test the ability of antisera raised against different PAG molecules (bovine, ovine and caprine) to react with placental extracts from nonruminants (rabbit, cat, mouse, pig, and wild pig) and ruminants (cow, ewe, and goat). Placental extracts from all nonruminants tested except rabbit reacted with anti bovine PAG2 (anti-boPAG2). Extracts of ruminant placentas reacted with different antisera, confirming the expression of various PAG molecules. According to the time at which the placentas were collected (early or middle pregnancy), the reaction differed as regards the thickness, position, and number of precipitation lines, suggesting that PAG expression varies as pregnancy progresses. Bos indicus and Bos taurus placental extracts

exhibited different reactions with anti-**boPAG2**: a single precipitation line in the former case and two lines in the latter. This suggests differential expression of **boPAG2** related glycoproteins in these two subspecies.

L78 ANSWER 2 OF 56 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 2001504042 MEDLINE
DOCUMENT NUMBER: 21437879 PubMed ID: 11553911
TITLE: Gene for porcine pregnancy-associated glycoprotein 2 (poPAG2): its structural organization and analysis of its promoter.
AUTHOR: Szafranska B; Miura R; Ghosh D; Ezashi T; Xie S; Roberts R M; Green J A
CORPORATE SOURCE: Department of Animal Sciences, University of Missouri-Columbia, Columbia, Missouri 65211, USA.
CONTRACT NUMBER: R37 HD21896 (NICHD)
SOURCE: MOLECULAR REPRODUCTION AND DEVELOPMENT, (2001 Oct) 60 (2) 137-46.
Journal code: 8903333. ISSN: 1040-452X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U39198; GENBANK-U39199; GENBANK-U39762; GENBANK-U39763; GENBANK-U41421; GENBANK-U41422; GENBANK-U41423; GENBANK-U41424
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 20010913
Last Updated on STN: 20020313
Entered Medline: 20020312

AB The pregnancy-associated glycoproteins (PAG) are abundant secretory products of the placental trophoctoderm of ungulate species. They are structurally related to pepsin, having the capability to bind peptides. However, many cannot function as enzymes due to amino acid substitutions in and around the catalytic site. Here, we demonstrate that pigs, like cattle and sheep, but unlike equids, have multiple PAG genes. One of the transcribed porcine PAG (poPAG) genes, the one for poPAG2, was cloned. It had a nine-exon organization similar to that of other mammalian aspartic proteinase genes with an atypical TATA sequence. A total of 1.2 kbp upstream from exon 1 was sequenced. This region shared identity (> 65%) with the promoter regions of the bovine (bo) PAG1, **boPAG2** and equine (eq) PAG genes, but not with other aspartyl proteinase genes, including that of pepsinogen A. Nor were there clear similarities to the promoters of other genes with trophoblast-specific expression. Of the different poPAG2 promoter constructs tested in transfection experiments in two human (JAR and JEG3) and one rat (Rcho) choriocarcinoma cell lines, only the shortest (-149 bp) was required to provide full expression of a luciferase reporter. Although this short promoter was not active in Cos-1 and L-929 cells, it was active in CHO cells, a transformed non-trophoblast hamster ovarian cell line. Co-transfection of Ets2 elevated the activity of this short promoter approximately six-fold in JAR cells, but, disruption of the two putative Ets sites did not alter the ability of Ets2 to transactivate the promoter. In the non-trophoblast cell lines, Ets2 failed to elicit any response. Ets2 responsiveness may be a common feature of most or all trophoblast-expressed genes, although in the case of poPAG2, the effect may be indirect.
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L78 ANSWER 3 OF 56 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 2000391364 MEDLINE
DOCUMENT NUMBER: 20297004 PubMed ID: 10819764

TITLE: Pregnancy-associated bovine and ovine glycoproteins exhibit spatially and temporally distinct expression patterns during pregnancy.

AUTHOR: Green J A; Xie S; Quan X; Bao B; Gan X; Mathialagan N; Beckers J F; Roberts R M

CORPORATE SOURCE: Department of Animal Sciences, University of Missouri-Columbia, Columbia, Missouri 65211, USA.

SOURCE: BIOLOGY OF REPRODUCTION, (2000 Jun) 62 (6) 1624-31. Journal code: 0207224. ISSN: 0006-3363.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

OTHER SOURCE: GENBANK-AF020506; GENBANK-AF020507; GENBANK-AF020508; GENBANK-AF020509; GENBANK-AF020510; GENBANK-AF020511; GENBANK-AF020512; GENBANK-AF020513; GENBANK-AF020514; GENBANK-AF192330; GENBANK-AF192331; GENBANK-AF192332; GENBANK-AF192333; GENBANK-AF192334; GENBANK-AF192335; GENBANK-AF192336; GENBANK-AF192337; GENBANK-AF192338; GENBANK-L06153; GENBANK-M73961; GENBANK-M73962; GENBANK-U30251; GENBANK-U94789; GENBANK-U94790; GENBANK-U94791; GENBANK-U94792; GENBANK-U94793; GENBANK-U94794; GENBANK-U94795

ENTRY MONTH: 200008

ENTRY DATE: Entered STN: 20000824
Last Updated on STN: 20000824
Entered Medline: 20000817

AB The pregnancy-associated glycoproteins (PAG) constitute a large family of recently duplicated genes. They show structural resemblance to pepsin and related aspartic proteinases. A total of 21 bovine (bo) PAG and 9 ovine (ov) PAG cDNA have been identified. Phylogenetic analysis indicated that the PAG are divided into two main groupings that accurately reflect their tissue expression, as determined by in situ hybridization. In the first pattern, represented by ovPAG-2 and **boPAG-2**, -8, -10, and -11 (where the numbering is arbitrary and reflects order of discovery within species), expression occurred throughout the outer epithelial layer of the placenta (trophoblast). The second pattern was predominant localization to binucleate cells. Ribonuclease protection assays, which allow discrimination between closely related transcripts, have shown that the expression of PAG varies in a temporal manner over pregnancy. Of those bovine PAG expressed predominantly in binucleate cells, **boPAG-1**, -6, and -7 are expressed weakly, if at all, by Day 25 placenta, but are present at the middle and end of pregnancy. Others, such as **boPAG-4**, -5, and -9, are expressed at Day 25 and at earlier stages. Although not among the earliest PAG produced by the trophoblast, **boPAG-1** has been used for pregnancy diagnosis, particularly in dairy cows, where there is a major need for a sensitive method capable of detecting pregnancy within 1 mo of conception. It seems likely that some of the newly discovered PAG will be better candidates than PAG-1 for pregnancy diagnosis.

L78 ANSWER 4 OF 56 MEDLINE DUPLICATE 6

ACCESSION NUMBER: 2000106090 MEDLINE

DOCUMENT NUMBER: 20106090 PubMed ID: 10641336

TITLE: Pregnancy associated glycoproteins in ruminants: inactive members of the aspartic proteinase family.

AUTHOR: Beckers J F; Drion P V; Garbayo J M; Perenyi Z; Zarrouk A; Sulong J; Remy B; Szenci O

CORPORATE SOURCE: University of Liege, Faculty of Veterinary Medicine, Physiology of Reproduction, Sart-Tilman, Belgium.

SOURCE: ACTA VETERINARIA HUNGARICA, (1999) 47 (4) 461-9. Ref: 42

Journal code: 8406376. ISSN: 0236-6290.
 PUB. COUNTRY: Hungary
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 General Review; (REVIEW)
 (REVIEW, TUTORIAL)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200002
 ENTRY DATE: Entered STN: 20000218
 Last Updated on STN: 20000218
 Entered Medline: 20000210

AB The Pregnancy Associated Glycoproteins (PAGs) presented in this paper are largely expressed in the ruminant placenta. These proteins are classified as probably inactive members of the aspartic proteinase family. Pepsinogen, renin, cathepsin E & D and chymosin are typical members of this family, characterised by the presence of aspartic acids boarding the recognition sites. Secreted in the peripheral blood of the pregnant female from **early** pregnancy, these proteins can be used in serological tests for establishing different diagnoses. In the veterinary practice, these diagnoses are useful for both pregnancy confirmation and follow-up of trophoblastic function. The first aspect can help breeders in the management of reproduction, while the second one more specifically concerns clinicians and researchers wishing to establish a differential diagnosis of pathologic conditions affecting pregnancy.

L78 ANSWER 5 OF 56 MEDLINE DUPLICATE 7
 ACCESSION NUMBER: 97084790 MEDLINE
 DOCUMENT NUMBER: 97084790 PubMed ID: 8931124
 TITLE: Comparative modelling and analysis of amino acid
 substitutions suggests that the family of
 pregnancy-associated glycoproteins includes both active and
 inactive aspartic proteinases.
 AUTHOR: Guruprasad K; Blundell T L; Xie S; Green J; Szafranska B;
 Nagel R J; McDowell K; Baker C B; Roberts R M
 CORPORATE SOURCE: Department of Crystallography, Birkbeck College, University
 of London, UK.
 CONTRACT NUMBER: HD 29483 (NICHD)
 SOURCE: PROTEIN ENGINEERING, (1996 Oct) 9 (10) 849-56.
 Journal code: 8801484. ISSN: 0269-2139.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 OTHER SOURCE: GENBANK-L06151; GENBANK-L06153; GENBANK-L34360;
 GENBANK-L34361; GENBANK-L38511; GENBANK-M73961;
 GENBANK-M73962
 ENTRY MONTH: 199705
 ENTRY DATE: Entered STN: 19970602
 Last Updated on STN: 20000303
 Entered Medline: 19970522

AB The pregnancy-associated glycoproteins (PAGs) are secretory products synthesized by the outer epithelial cell layer (chorion) of the placentas of various ungulate species. The amino acid sequences of eight PAGs have been inferred from cloned cDNA of cattle and sheep, as well as of the non-ruminant pig and horse. We compare the PAG sequences and present results of the three-dimensional models of **boPAG-1** and **ovPAG-1** that were constructed on the basis of the crystal structures of homologous porcine pepsin and bovine chymosin using a rule-based comparative modelling approach. Further, we compare peptide binding subsites defined by interactions with pepstatin and a decapeptide inhibitor (CH-66) modelled on the basis of crystal structures of other aspartic proteinases.

We have extended our analysis of the peptide binding subsites to the other PAG molecules of known sequence by aligning the PAG sequences to the structural template derived from the pepsin family and by making use of the three-dimensional models of the **boPAG-1** and **ovPAG-1**. The residues that are likely to affect peptide binding in the **boPAG-1**, **ovPAG-1** and other PAG molecules have been identified. Sequence comparisons reveal that all PAG molecules may have evolved from a pepsin-like progenitor molecule with the equine PAG most closely related to the pepsins. The presence of substitutions at the S1 and other subsites relative to pepsin make it unlikely that either bovine, ovine or the porcine PAG-1 have catalytic activity. Only two of the eight PAGs examined (porcine PAG-2 and equine PAG-1) retain features of active aspartic proteinases with pepsin-like activity. Our results indicate that in the PAGs so far characterized the peptide binding specificities differ significantly from each other and from pepsin, despite their high sequence identities. Analysis of the various peptide binding subsites demonstrates why both bovine and ovine PAG-1 are capable of binding pepstatin. The strong negative charge in the binding cleft of **boPAG-1** and **ovPAG-1** indicates a preference for lysine- or arginine-rich peptides. PAGs represent a family where the possible peptide binding function may be retained through their binding specificities, but where the catalytic activity may be lost in some cases, such as the **boPAG-1**, **ovPAG-1** and the **poPAG-1**.

L78 ANSWER 6 OF 56 MEDLINE DUPLICATE 10
 ACCESSION NUMBER: 92190402 MEDLINE
 DOCUMENT NUMBER: 92190402 PubMed ID: 1547318
 TITLE: Radioimmunoassay of a bovine pregnancy-associated glycoprotein in serum: its application for pregnancy diagnosis.
 AUTHOR: Zoli A P; Guilbault L A; Delahaut P; Ortiz W B; Beckers J F
 CORPORATE SOURCE: Departement d'Endocrinologie et de Reproduction Animales (Unite de Recherche IRSIA), Faculte de Medecine Veterinaire, Universite de l'Etat a Liege, Belgique.
 SOURCE: BIOLOGY OF REPRODUCTION, (1992 Jan) 46 (1) 83-92.
 Journal code: 0207224. ISSN: 0006-3363.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199204
 ENTRY DATE: Entered STN: 19920509
 Last Updated on STN: 19920509
 Entered Medline: 19920420

AB A sensitive and specific double-antibody RIA for a bovine pregnancy-associated glycoprotein (bPAG) is described. The limit of detection was 0.2 ng/ml. The assay was specific for bPAG in that pituitary and placental gonadotropic hormones and other placental or serum proteins assayed in serial dilutions did not cross-react. The RIA allowed measurement of bPAG in placental extracts, fetal serum, fetal fluids, and serum or plasma of pregnant cows. About 20% of unbred heifers and nonpregnant cows had detectable levels ranging from 0.30 +/- 0.09 to 0.50 +/- 0.17 ng/ml (mean +/- SD), and 15% of bull sera showed higher concentrations (3.01 +/- 1.73 ng/ml) of bPAG or bPAG-like protein. Variations among animals was observed in fetal serum bPAG concentrations. Bovine PAG was detected in maternal peripheral blood at Day 22 of pregnancy (mean +/- SD, 0.38 +/- 0.13 ng/ml) in some animals and at Day 30 in all pregnant cows. Peripheral serum bPAG levels increased progressively to 3.60 +/- 1.73 ng/ml (mean +/- SD) at Day 30 of pregnancy, to 24.53 +/- 8.81 ng/ml at Day 120, and to 1551.91 +/- 589.68 ng/ml at Day 270. Peak concentration of bPAG was 2462.42 +/- 1017.88 ng/ml and it occurred 1-5

days prior to parturition. After delivery, bPAG concentrations decreased steadily to 499.63 +/- 267.20 ng/ml at Day 14 postpartum (pp), 10.12 +/- 7.84 ng/ml at Day 60 pp, and 1.44 +/- 1.08 ng/ml at Day 90 pp. The undetectable concentration (less than 0.20 ng/ml) was reached by Day 100 +/- 20 pp. An investigation undertaken in Holstein heifers, Holstein cows, and Hereford cows used as recipients for purebred Holstein embryos supplied evidence of the influence of breed of recipient and sex of fetuses on peripheral concentrations of bPAG. A herd of 430 Holstein-Friesian heifers that had received transferred embryos were bled at Day 35 postestrus (pe) for measurement of bPAG. The bPAG was detected in 287 of 430 serum samples analyzed. By rectal palpation performed at Day 45 pe, 267 heifers with detectable levels of bPAG at Day 35 pe were confirmed to be pregnant as were 3 of 143 heifers previously diagnosed as not pregnant by RIA. These results suggest that detection of this placental-specific antigen in the serum could be used as a specific serological method for **early** pregnancy diagnosis in cattle from 28 days after breeding.

L78 ANSWER 7 OF 56 MEDLINE DUPLICATE 11
ACCESSION NUMBER: 87311435 MEDLINE
DOCUMENT NUMBER: 87311435 PubMed ID: 3625605
TITLE: Serological detection of **early** pregnancy in cattle and partial characterization of a serum glycoprotein associated with **early** pregnancy.
AUTHOR: Klima F; Tiemann U; Pitra C; Kauffold P
SOURCE: JOURNAL OF REPRODUCTIVE IMMUNOLOGY, (1987 May) 11 (1) 31-9. Journal code: 8001906. ISSN: 0165-0378.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198710
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19871015

AB Sera from heifers prior to artificial insemination (AI), 1-8 days after AI, and 7 days after embryo removal were investigated by crossed immunoelectrophoresis (CIE) by use of rabbit antiserum produced against bovine **early** pregnancy serum and intensively absorbed with non-pregnancy serum. One precipitation peak appeared in the alpha-globulin region when sera of non-pregnant heifers were under study. An additional peak could be demonstrated in the same region when sera of **early** pregnant heifers were investigated. By this method 91.5% of 71 sera samples were classified correctly to be pregnant or non-pregnant. The glycoprotein character of the above two serum components could be shown by binding to concanavalin A (Con A) in lectin affinity CIE. Relative molecular weights were estimated to be about 70,000 and 80,000 for the peptides of these two proteins applying sodium dodecyl sulfate polyacrylamide gel electrophoresis of precipitates cut out from CIE-plates. As shown previously close relation of this **early** pregnancy associated protein (EPAP) to the **early** pregnancy factor is supposed because of its characteristics and its ability to affect cellular immunity.

L78 ANSWER 8 OF 56 MEDLINE
ACCESSION NUMBER: 95349003 MEDLINE
DOCUMENT NUMBER: 95349003 PubMed ID: 7623312
TITLE: Inhibin and activin in embryonic and fetal development in ruminants.
AUTHOR: Jenkin G; McFarlane J; de Kretser D M
CORPORATE SOURCE: Department of Physiology, Monash University, Clayton,

SOURCE: Victoria, Australia.
JOURNAL OF REPRODUCTION AND FERTILITY. SUPPLEMENT, (1995)
49 177-86. Ref: 53
Journal code: 0225652. ISSN: 0449-3087.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199508
ENTRY DATE: Entered STN: 19950911
Last Updated on STN: 19950911
Entered Medline: 19950828

AB Inhibin, activin and follistatin are protein hormones with diverse physiological roles. The involvement of inhibin in the regulation of pituitary FSH production and secretion in adult males and non-pregnant females is well established. However, it is unlikely that inhibin plays a similar role in pregnancy in ruminants. Inhibin and activin molecules show a high degree of structural similarity to potent growth and differentiation factors of the transforming growth factor beta (TGF-beta) superfamily of peptides and their localization in a range of embryonic and fetal tissues indicates that they may thus play a role in development. Furthermore, the demonstration that follistatin is also present in a number of embryonic and fetal tissues and fluids has further implications for the actions of activin to which it binds. The role of inhibin, activin and follistatin in **early** development has yet to be established since gene knockout experiments have so far proved inconclusive. During mid- and late gestation, high concentrations of inhibin are found in the testes and plasma of male fetuses of sheep and cattle. Inhibin may play a role in regulating pituitary FSH release in late pregnancy, but the very high concentrations of this hormone in ovine fetal testes and in male fetal plasma compared with that observed in the fetal ovary and female fetal plasma has yet to be explained. The recent observation of high concentrations of inhibin, activin and follistatin in amniotic fluid surrounding the fetus is intriguing. Excretion via urine or lung liquid is partly responsible for the presence of these proteins in amniotic fluid. The fetal membranes and the placenta are also possible sources. It remains to be established whether these proteins constitute an inactive pool of secreted hormone or whether they have other actions in this fetal compartment.

L78 ANSWER 9 OF 56 MEDLINE
ACCESSION NUMBER: 95113492 MEDLINE
DOCUMENT NUMBER: 95113492 PubMed ID: 7814074
TITLE: A role for cytokines in **early** pregnancy.
AUTHOR: Mathialagan N; Roberts R M
CORPORATE SOURCE: Department of Animal Sciences, University of
Missouri-Columbia 65211.
CONTRACT NUMBER: HD 21896 (NICHD)
SOURCE: INDIAN JOURNAL OF PHYSIOLOGY AND PHARMACOLOGY, (1994 Jul)
38 (3) 153-62. Ref: 92
Journal code: 0374707. ISSN: 0019-5499.
PUB. COUNTRY: India
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199502
ENTRY DATE: Entered STN: 19950217

Last Updated on STN: 19950217

Entered Medline: 19950206

AB Cytokines are expressed in a variety of cell types of the reproductive system, although in most instances their functions are not understood. There are, however, a few instances where a role in **early** pregnancy has been established. First, preimplantation conceptuses of ruminant ungulate species, such as cattle, sheep and goat, secrete a unique Type I interferon (IFN-tau). By mechanisms that are still unclear, IFN-tau prevents the destruction of the corpus luteum and hence ensures the continued production of progesterone which is essential for continuation of pregnancy. Most like the IFN-tau prevent luteolysis by modulating the output of a luteolytic hormone, prostaglandin F2 alpha, from the uterus. Despite this involvement in pregnancy, the IFN-tau possess similar antiproliferative and antiviral activities to other Type I IFN, 1 lambda e.g. IFN-alpha. There are 4-5 genes for IFN-tau in sheep and cattle whose promotor regions are highly conserved and distinct from those of other Type I IFN. These genes are not virally inducible and are expressed only in the trophoblast (outer epithelium of the developing placenta) from the time of blastocyst hatching to implantation. Leukemia inhibitory factor (LIF) is a multi-functional cytokine which is expressed by uterine endometrium of pregnant mice around day 4 of pregnancy. Female mice lacking a functional LIF gene are fertile but their blastocysts fail to implant, strongly implicating the cytokine in maternal control of implantation. Colony stimulating factors (CSF) are a family of proteins (GM-CSF, CSF-1, G-CSF, and IL-3) that stimulate the cellular proliferation and induction of terminal differentiation of hemopoietic progenitor cells. CSF-1 is expressed in the uterine endometrium of the mouse and human during **early** pregnancy and its receptor, fms, is present on trophoblast. The osteopetrotic mouse, which represents a natural "knockout" of the CSF-1 gene, exhibits a low rate of fetal implantation and poor fetal viability. It seems likely that CSF-1 expression by the uterus influences growth and differentiation of the placenta. Although different species may utilize different strategies for ensuring developmental and endocrinological coordination between the embryo and the mother, these three examples illustrate that cytokines are likely to be major participants as autocrine factors that direct the events of **early** pregnancy and not simply as modulators of the maternal immune system..

L78 ANSWER 10 OF 56

MEDLINE

ACCESSION NUMBER: 89306147 MEDLINE

DOCUMENT NUMBER: 89306147 PubMed ID: 2744224

TITLE: Inhibin mRNAs in ovine and bovine ovarian follicles and corpora lutea throughout the estrous cycle and gestation.

AUTHOR: Rodgers R J; Stuchbery S J; Findlay J K

CORPORATE SOURCE: Medical Research Centre, Prince Henry's Hospital, Melbourne, Vic., Australia.

SOURCE: MOLECULAR AND CELLULAR ENDOCRINOLOGY, (1989 Mar) 62 (1) 95-101.

Journal code: 7500844. ISSN: 0303-7207.

PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198908

ENTRY DATE: Entered STN: 19900309

Last Updated on STN: 19900309

Entered Medline: 19890818

AB Follicles and corpora lutea were dissected from ovine and bovine ovaries and the RNA extracted and subjected to Northern blot analyses for alpha- and beta A-inhibin mRNAs, using bovine cDNA and cRNA probes. A cDNA probe

detecting mRNA for cholesterol side-chain cleavage cytochrome P-450 (P-450scc) was used as a positive control. In cattle, alpha- and beta A-inhibin mRNAs were not detected in ovarian stroma, which could potentially have contained follicles up to 0.5 mm in diameter. Inhibin-alpha and -beta A mRNAs were detected in bovine antral follicles but after ovulation, the relative levels of alpha- and beta A-inhibin mRNAs declined and were undetectable in mature fully developed cyclic corpora lutea and in pregnancy corpora lutea from **early** to late gestation of the cow. In sheep, alpha- and beta A-inhibin mRNAs were detected in a pool of antral follicles but not in cyclic or pregnancy corpora lutea, which did contain P-450scc mRNA. It is concluded that in cattle and sheep, follicles and not mature corpora lutea are the ovarian source of inhibin.

L78 ANSWER 11 OF 56 MEDLINE

ACCESSION NUMBER: 89062597 MEDLINE
 DOCUMENT NUMBER: 89062597 PubMed ID: 3196789
 TITLE: Characterization of a high molecular weight glycoprotein secreted by the peri-implantation bovine conceptus.
 AUTHOR: Newton G R; Hansen P J; Low B G
 CORPORATE SOURCE: Department of Dairy Science, University of Florida, Gainesville 32611.
 CONTRACT NUMBER: HD20671 (NICHD)
 SOURCE: BIOLOGY OF REPRODUCTION, (1988 Oct) 39 (3) 553-60.
 Journal code: 0207224. ISSN: 0006-3363.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 198901
 ENTRY DATE: Entered STN: 19900308
 Last Updated on STN: 19970203
 Entered Medline: 19890118

AB Cow conceptuses were flushed from uteri on Day 17 of pregnancy and cultured with [3H]glucosamine and [14C]leucine. A high molecular weight glycoprotein (HMWG) having an Mr = 765,000 was isolated by a combination of anion-exchange and gel-filtration chromatography. Selective chemical and enzymatic degradations were performed. The HMWG was resistant to Pronase and peptide: N-glycanase F. Only endo-beta-galactosidase and harsh alkaline reducing conditions were successful in dissociating carbohydrate from the protein core, suggesting that carbohydrate chains are N-linked to Asn and contain beta-galactosidic linkages. The intact molecule could bind to an affinity column of Datura stramonium lectin, suggesting the presence of beta(1-4)-linked oligomers of N-acetylglucosamine. The susceptibility of HMWG to endo-beta-galactosidase suggests that at least some of these oligomers are substituted with galactose to form N-acetyllactosamine. Binding of HMWG to lectin could be inhibited partially with N-acetyllactosamine or completely with a mixture of N, N'-diacetylchitobiose and N, N', N''-triacetylchitotriose. In summary, properties of the HMWG suggest it contains lactosaminoglycan components and is almost identical to an HMWG secreted by the Day 16 ovine conceptus. Thus, embryos of these two ruminant species secrete similar molecules during **early** pregnancy.

L78 ANSWER 12 OF 56 MEDLINE

ACCESSION NUMBER: 85226677 MEDLINE
 DOCUMENT NUMBER: 85226677 PubMed ID: 3890969
 TITLE: Immunosuppressive activity associated with **early** pregnancy in the bovine.
 AUTHOR: Fisher S J; Gimenez T; Henricks D M
 SOURCE: BIOLOGY OF REPRODUCTION, (1985 May) 32 (4) 894-906.

Journal code: 0207224. ISSN: 0006-3363.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198508
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19850812

AB Immunosuppressive activity was assessed in uterine flushings (UF) and uterine vein serum and plasma from nonpregnant and **early** -pregnant cows, and in media from the short-term culture of Day 18 bovine embryos. The preparations were tested for their ability to inhibit [3H] thymidine (3H-TdR) incorporation into phytohemagglutinin-stimulated bovine lymphocytes. On Days 2-3 (called Day 3), Days 9-10 (called Day 10), and Days 17-19 (called Day 18) of the estrous cycle (estrus = Day 0) and pregnancy, untreated and superovulated cows were anesthetized and jugular vein and uterine vein blood was collected. The uteri were removed and flushed to obtain UF and embryos. Uterine flushings were concentrated and tested for immunosuppressive activity at 400 micrograms uterine protein/ml culture fluid. Uterine flushings from both Day 18 pregnant and Day 18 nonpregnant cows were immunosuppressive (8/8), whereas Day 10 UF were usually not immunosuppressive (7/10). Day 3 UF were usually stimulatory or only marginally suppressive (8/8). Uterine vein serum and plasma from Day 18 cows were not suppressive when compared to jugular vein serum or plasma from the same cow; neither were Day 18 uterine vein serum or plasma suppressive when compared to those same samples taken from Day 3 cows. Embryo culture media obtained from the 48-h culture of Day 18 embryos was consistently suppressive. The activity was lost after dialysis in 1000-Mr cut-off tubing, removed by charcoal, and reduced by protease digestion. These results suggest two mechanisms whereby the embryo could escape immune rejection: 1) the progesterone-induced secretion of a uterine immunosuppressive substance(s) and 2) the production by the embryo of a low molecular weight immunosuppressive substance(s).

L78 ANSWER 13 OF 56 MEDLINE
ACCESSION NUMBER: 81051820 MEDLINE
DOCUMENT NUMBER: 81051820 PubMed ID: 7001192
TITLE: Possible mechanism of success of an allotransplantation in nature: mammalian pregnancy.
AUTHOR: Mukherjee A B; Laki K; Agrawal A K
SOURCE: MEDICAL HYPOTHESES, (1980 Oct) 6 (10) 1043-55.
Journal code: 7505668. ISSN: 0306-9877.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198101
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19900316
Entered Medline: 19810129

AB A new hypothesis is presented to explain the mechanism of non-rejection of a natural allograft: the mammalian fetus during **early** development. Using the rabbit as a model, it is proposed here that uteroglobin (UG., MW. 15,800) synthesized in the uterus during **early** pregnancy, crosslinks with beta 2-microglobulin (part of the H-2 and HL-A antigens) on the embryonic cell surface. This crosslinking is achieved by the enzyme transglutaminase (coagulation factor XIIIa), which has a 4--5 fold increased activity in the uterus during **early** pregnancy. The conversion of pre-uteroglobin (Pre-UG) to uteroglobin (UG) and pro-transglutaminase (factor XIII) to active transglutaminase (factor

XIIIIa) is achieved by the concurrent increased activity of proteases present in the uterus at this time. UG is a dimeric protein with two alpha-helices running in parallel and connected by two disulfide bonds. We propose that UG molecules crosslink with beta 2-microglobulin in the presence of transglutaminase (factor XIIIIa). A crosslinked beta 2-microglobulin-uteroglobin complex is formed which masks the H-2 or HL-A antigen of the implanting embryo. Thus, the maternal lymphocytes do not recognize the fetal cells as foreign. This mechanism may also explain the non-immunogenicity of ejaculated sperm in the uterus, as well as the non-immunogenicity of fetal cells found in the maternal circulation during pregnancy. At later stages of pregnancy, other proteins and/or hormones as well, may play a role in non-rejection of the fetus. However, the beta 2-microglobulin-uteroglobin complex masking the transplantation antigens of the embryo may be the major mechanism for immunological protection and non-rejection of the implanting embryo.

L78 ANSWER 14 OF 56 MEDLINE
 ACCESSION NUMBER: 71283198 MEDLINE
 DOCUMENT NUMBER: 71283198 PubMed ID: 5568279
 TITLE: Protein electrophoretic pattern of bovine allantoic fluid during **early** pregnancy.
 AUTHOR: Hamana K; Hafez E S
 SOURCE: CORNELL VETERINARIAN, (1971 Jul) 61 (3) 375-80.
 Journal code: 0074245. ISSN: 0010-8901.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 197111
 ENTRY DATE: Entered STN: 19900101
 Last Updated on STN: 19900101
 Entered Medline: 19711105

L78 ANSWER 15 OF 56 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5
 ACCESSION NUMBER: 1999:614262 CAPLUS
 DOCUMENT NUMBER: 131:225823
 TITLE: **Early pregnancy** diagnosis using immunoassays for pregnancy-associated glycoproteins
 INVENTOR(S): Roberts, Robert Michael; Green, Jonathan Andrew; Xie, Sancai
 PATENT ASSIGNEE(S): The Curators of the University of Missouri, USA
 SOURCE: PCT Int. Appl., 136 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9947934	A2	19990923	WO 1999-US6038	19990319
WO 9947934	A3	20010719		
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

CA 2323812 AA 19990923 CA 1999-2323812 19990319
 AU 9931028 A1 19991011 AU 1999-31028 19990319
 EP 1141727 A2 20011010 EP 1999-912715 19990319

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, FI

PRIORITY APPLN. INFO.:

US 1998-78783P A2 19980320
 US 1998-106188P A2 19981028
 WO 1999-US6038 W 19990319

AB Pregnancy-assocd. glycoproteins (**PAGs**) are structurally related to the pepsins, thought to be restricted to the hoofed (ungulate) mammals and characterized by being expressed specifically in the outer epithelial cell layer (chorion/trophoblast) of the placenta. By cloning expressed genes from ovine and bovine placental cDNA libraries, the inventors est. that cattle, sheep, and most probably all ruminant Artiodactyla, possess possibly 100 or more **PAG** genes, many of which are placentally expressed. The **PAGs** are highly diverse in sequence, with regions of hypervariability confined largely to surface-exposed loops. Selected **PAG** that are products of the invasive binucleate cells, expressed highly in **early pregnancy** at the time of trophoblast invasion and expressed weakly, if at all, in late gestation are useful in the early diagnosis of pregnancy. In a preferred embodiment, the invention relates to immunoassays for detecting these **PAGs**.

L78 ANSWER 16 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:965035 CAPLUS
 DOCUMENT NUMBER: 138:21822
 TITLE: Determination of pregnancy status
 INVENTOR(S): Ott, Troy L.
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002192838	A1	20021219	US 2002-166929	20020610
WO 2002103352	A1	20021227	WO 2002-US18479	20020610

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-299553P P 20010619

AB A method and kit for detg. whether an animal is not pregnant, or is pregnant following a breeding. The level of expression of a pregnancy induced protein is detd. in an animal for which pregnancy status information is desired and the level is compared to that of the level in animals that are not pregnant.

L78 ANSWER 17 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:424853 CAPLUS
 DOCUMENT NUMBER: 138:119484

TITLE: Comparison of the ability of three radioimmunoassay to detect pregnancy-associated glycoproteins in bovine plasma

AUTHOR(S): Perenyi, Z. S.; Szenci, O.; Sulon, J.; Drion, P. V.; Beckers, J. F.

CORPORATE SOURCE: Department of Physiology of Reproduction, University of Liege, Liege, Belg.

SOURCE: Reproduction in Domestic Animals (2002), 37(2), 100-104

CODEN: RDANEF; ISSN: 0936-6768

PUBLISHER: Blackwell Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pregnancy-assocd. glycoproteins (**PAGs**) constitute a large family of glycoproteins that are synthesized in the superficial layer of the ruminant placenta according to a spatial and temporal expression pattern. When **PAGs** are released in the maternal blood they can be used for pregnancy diagnosis, pregnancy follow-up and for the monitoring of the trophoblastic function. Three different RIA systems (RIA 1, RIA 2 and RIA 3) using antisera produced against **PAG** I67 (RIA 1), **PAG**55 + 62 (RIA 2) and **PAG**55 + 59 (RIA 3) were used in this investigation in order to measure the **PAG** concn. in plasma samples withdrawn from pregnant cows and heifers during different periods following artificial insemination (AI). These systems were able to detect **PAG** mols. in the maternal blood as early as 21 days after AI in different concns. (RIA 1: 0.43 \pm 0.24 ng/mL, mean \pm SD; RIA 2: 0.48 \pm 0.24 ng/mL; RIA 3: 0.64 \pm 0.37 ng/mL). On days 32 and 42 RIA 2 (4.30 \pm 1.32 ng/mL and 5.56 \pm 1.95 ng/mL) and RIA 3 (4.17 \pm 1.15 ng/mL and 5.60 \pm 1.89 ng/mL) presented significantly ($p < 0.0001$) higher **PAG** concns. than those of RIA 1 (2.43 \pm 0.81 ng/mL and 4.01 \pm 1.48 ng/mL), resp. After day 21, significant correlations ($p < 0.0001$; $r_{\text{gtoreq.}} 0.929$) were detd. between the three systems. Addnl. the three individual **PAG** profiles presented in this study showed that **PAG** mols. secreted in the maternal blood between 21 and 50 days after AI were better recognized by the RIA 2 and RIA 3 systems. This study clearly indicated that the ability of a RIA test to recognize **PAG** mols. in the maternal blood can be improved by carefully selecting the antiserum.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 18 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:11196 CAPLUS

DOCUMENT NUMBER: 130:180431

TITLE: Pregnancy-specific protein B induces release of an **alpha** chemokine in bovine endometrium

AUTHOR(S): Austin, Kathy J.; King, Cathy P.; Vierk, Judith E.; Sasser, R. Garth; Hansen, Thomas R.

CORPORATE SOURCE: Reproductive Biology Program, Department of Animal Science, University of Wyoming, Laramie, WY, 82071, USA

SOURCE: Endocrinology (1999), 140(1), 542-545

CODEN: ENDOAO; ISSN: 0013-7227

PUBLISHER: Endocrine Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pregnancy-specific protein B (PSPB), is secreted from binucleate trophoblast of the bovine conceptus as early as day 15 of pregnancy. The objective of this expt. was to det. if PSPB induced uterine proteins. PSPB was purified from day 120 cotyledons using antibody-based affinity chromatog. Endometrium from day 14 non-pregnant cows ($n = 3$) was prepd.

for explant (3H-Leu added) culture. Radiolabeled proteins released into medium were dialyzed, sepd. using 1D-PAGE, and detected using fluorog. and densitometry. PSPB (0, 0.5, 5, 25 & 50 nM) caused a concn.-dependent increase in the release of a radiolabeled 8-kDa uterine protein. Western blots revealed that the 8-kDa protein cross-reacted with antibody against granulocyte chemotactic protein-2 (GCP-2). PSPB also induced release of GCP-2 by bovine endometrial (BEND) cells in primary culture. The induction of GCP-2 by PSPB was blocked by addn. of antiserum against PSPB (1:4 molar ratio). This is the first indication that PSPB has a hormonal role in inducing GCP-2, an alpha chemokine that also is induced by interferon-tau during **early pregnancy**.

This chemotactic cytokine may be integral to mediating adhesion, inflammation and angiogenesis assocd. with early implantation.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 19 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:556385 CAPLUS

DOCUMENT NUMBER: 129:311432

TITLE: Expression of multiple genes for pregnancy-associated glycoproteins in the sheep placenta

AUTHOR(S): Xie, Sancai; Green, Jonathan; Roberts, R. Michael

CORPORATE SOURCE: Departments of Animal Science, University of Missouri-Columbia, Columbia, MO, 65211, USA

SOURCE: Advances in Experimental Medicine and Biology (1998), 436(Aspartic Proteinases), 195-200
CODEN: AEMBAP; ISSN: 0065-2598

PUBLISHER: Plenum Publishing Corp.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Bovine pregnancy-assocd. glycoprotein 1 (**boPAG1**), also known as pregnancy-specific protein B was initially identified as a unique placental antigen in cattle by raising antisera against total placental proteins in rabbits. Serol. similar antigens have also been found in sheep and other ruminant ungulates. Mol. cloning showed that bo- and ovine (ov) PAG1 belong to the superfamily of aspartic proteinases, but appear to be enzymically inactive due to key mutations around the catalytic site regions. Soon after the initial cloning of ov- and **boPAG1**, several other PAG were identified. Here, we attempt to est. the no. of PAG-related genes and their products in the ovine placenta. The results of our expts. show that there are many PAG genes in the ovine genome and many of these are expressed in the placenta.

L78 ANSWER 20 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:114058 CAPLUS

DOCUMENT NUMBER: 124:143308

TITLE: Ubiquitin cross-reactive protein is released by the bovine uterus in response to interferon during **early pregnancy**

AUTHOR(S): Austin, Kathy J.; Ward, Stephanie K.; Teixeira, Glaucia; Dean, Victoria C.; Moore, David W.; Hansen, Thomas R.

CORPORATE SOURCE: Department of Animal Science, University of Wyoming, Laramie, WY, 82071, USA

SOURCE: Biology of Reproduction (1996), 54(3), 600-6
CODEN: BIREBV; ISSN: 0006-3363

PUBLISHER: Society for the Study of Reproduction

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A 16-kDa protein has been identified that is secreted by the bovine endometrium in response to conceptus-derived interferon (IFN)-.tau. during

early pregnancy. Because this uterine protein was similar in size to a human ubiquitin cross-reactive protein (hUCRP) that also was regulated by IFN, the authors suspected that they might be related. To test this hypothesis, uterine flushings, medium from cultured endometrium, and endometrial tissues were examd. for the presence of ubiquitin-immunoreactive proteins. Immunoreacting proteins were detected through use of 1-dimensional (1D)-**PAGE** and Western blotting with ubiquitin and hUCRP antiserum (1:500). A 16-kDa protein that cross-reacted with ubiquitin and hUCRP antisera was released by the endometrium and was present in uterine flushings from all day 18 pregnant females examd. The immunoreacting 16-kDa protein was absent in all nonpregnant females examd. Regulation of this uterine protein by recombinant type I IFNs (rbIFN-.tau., rbIFN-.alpha., and roIFN-.tau.), using 0, 0.5, 5, and 25 nm of each IFN, was evaluated in nonpregnant (day 12) heifers using 1D-**PAGE** and Western blotting. Release of the 16-kDa protein into medium was negligible in controls (0 nm IFN). For each IFN, a dose-dependent increase in release of the immunoreacting 16-kDa protein was noted. Thus, the 16-kDa protein that is produced by the endometrium in response to IFN-.tau. during **early pregnancy** also shares epitopes with hUCRP and ubiquitin. The 16-kDa protein has been named bovine UCRP.

L78 ANSWER 21 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:267773 CAPLUS

DOCUMENT NUMBER: 120:267773

TITLE: Bovine **early pregnancy** factor: its characterization and an attempt to produce anti-bovine EPF antibody

AUTHOR(S): Ito, Kazuei; Yasuda, Yasuhisa

CORPORATE SOURCE: Fac. Agric., Iwate Univ., Morioka, 020, Japan

SOURCE: Journal of Reproduction and Development (1993), 39(4), 309-17

CODEN: JREDEF; ISSN: 0916-8818

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In a previous study, the authors suggested that bovine EPF had a mol. wt. of 21.5 kDa because a 21.5 kDa polypeptide was not found in the nonpregnant serum, and the isoelec. point was near 5.0 by 2D SDS-**PAGE** using non-equil. pH gradient electrophoresis. The authors extended the study to characterize the biochem. nature of purified bovine EPF. As a result, the isoelec. point of bovine EPF turned out to be 6.3 by 2D SDS-**PAGE** using isoelec. focusing. Also, the purified EPF was not reduced by the addn. of 2-mercaptoethanol, indicating that bovine EPF is a monomeric peptide. Amino acid anal. of EPF was attempted, but a definitive sequence could not be confirmed. In the present study, the crude anti-EPF IgG fraction was purified by adsorption with CNBr-activated Sepharose 4B coupled with nonpregnant bovine whole serum. The purified anti-EPF IgG decreased the rosette inhibition titer of pregnant serum from 6 to 3. The Sepharose 4B affinity column coupled with anti EPF-IgG effectively isolated the EPF from pregnant bovine serum.

L78 ANSWER 22 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1993:36604 CAPLUS

DOCUMENT NUMBER: 118:36604

TITLE: Characterization and immunolocalization of bovine uterine **retinol**-binding protein

AUTHOR(S): Liu, Kaung H.; Godkin, James D.

CORPORATE SOURCE: Dep. Anim. Sci., Univ. Tennessee, Knoxville, TN, 37901, USA

SOURCE: Biology of Reproduction (1992), 47(6), 1099-104

CODEN: BIREBV; ISSN: 0006-3363

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Endometrial explants obtained from cows on days 13-29 of pregnancy were cultured for 24 h in modified min. essential medium in the presence of [35S]methionine or [3H]leucine. Proteins synthesized and released into medium were analyzed by 2-dimensional **PAGE** and fluorog. Uterine luminal flushings were obtained from cyclic cows (days 2-20 of estrous cycle) and **early pregnant** cows (days 17-22). Endometrial tissues from cows on days 17 and 29 of pregnancy were prepd. for immunocytochem. A uterine secretory protein, which consisted of 5 isoelec. variants (pI 5.3-6.1) of identical mol. mass (23,000 Da), reacted immunol. with antiserum raised against bovine placental retinol-binding protein (bpRBP). Limited N-terminal sequence anal. of 2 major isoforms showed that the protein had nearly complete homol. with bovine placental and plasma retinol-binding protein (RBP) over the 1st 25 amino acids. Through use of bpRBP antiserum, immunoreactive RBP was detected in uterine flushings collected from cows in the late luteal phase of the estrous cycle and **early pregnancy** by Western blotting, and in medium conditioned by uterine explants prepd. at days 13-29 of pregnancy by immunopptn. Immunoreactive RBP was localized in endometrial surface and glandular epithelium on days 17 and 29 of pregnancy by immunocytochem. These results demonstrate that RBP is a product of bovine uterine tissues. The uterine RBP may play an important role in vitamin A transport between maternal tissues and developing embryos.

L78 ANSWER 23 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:294959 CAPLUS

DOCUMENT NUMBER: 120:294959

TITLE: Bovine **early pregnancy** factor: purification and biochemical examination

AUTHOR(S): Ito, Kazuei; Yasuda, Yasuhisa

CORPORATE SOURCE: Fac. Agric., Iwate Univ., Morioka, 020, Japan

SOURCE: Journal of Reproduction and Development (1992), 38(6), j39-j48
CODEN: JREDEF; ISSN: 0916-8818

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The isolation and purifn. of **early pregnancy** factor (EPF) in the serum of pregnant bovine is described. The serum of 10.4L was obtained from a pregnant bovine of 8 days after artificial insemination. The rosette inhibition titer (RIT) of the serum was 6. EPF was isolated using the diafiltration, ion-exchange chromatog. (CM-Sepharose, DEAE-Sepharose) and FPLC-gel permeation chromatog. EPF active fraction was recognized in the elute (RIT = 7) of 50 mM NaCl on the CM-Sepharose and the unadsorbed fraction (RIT .gtoreq.8) on the DEAE-Sepharose. The unadsorbed fraction of DEAE-Sepharose had 4 bands by SDS-**PAGE** anal. The mol. wts. of 4 bands were 23, 22, 21.5, and 21 kDa resp. Further, the fraction No. 32 of the FPLC had a high EPF activity (RIT .gtoreq.8) and the mol. wt. of this fraction was estd. as 21.apprx.22 kDa. The isoelec. point of EPF was .apprx.5.0 by 2D-SDS-**PAGE** anal.

L78 ANSWER 24 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1988:623277 CAPLUS

DOCUMENT NUMBER: 109:223277

TITLE: Heat stress-induced alterations in the synthesis and secretion of proteins and prostaglandins by cultured bovine **conceptuses** and uterine endometrium

AUTHOR(S): Putney, D. J.; Malayer, J. R.; Gross, T. S.; Thatcher, W. W.; Hansen, P. J.; Drost, M.

CORPORATE SOURCE: Inst. Food Agric. Sci., Univ. Florida, Gainesville,

FL, 32611, USA
SOURCE: Biology of Reproduction (1988), 39(3), 717-28
CODEN: BIREBV; ISSN: 0006-3363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of in vitro heat stress on protein and prostaglandin synthesis and secretion by bovine conceptuses and endometrium was examd. Conceptuses and endometrium obtained on Day 17 of pregnancy were cultured at thermoneutral (39.degree., 24 h) or heat stress (39.degree., 6h; 43.degree., 18 h) temps. in medium supplemented with L-[4,5-3H]leucine (100 .mu.Ci) and arachidonic acid (10 .mu.g/mL). Radiolabeled protein secreted into the culture medium increased with time in both groups. Heat stress reduced the incorporation of [3H]leucine into intracellular and secreted proteins by conceptuses but did not alter the incorporation of [3H]leucine by endometrium. In particular, heat stress reduced by 72% the secretion of bovine trophoblast protein-1, the conceptus polypeptide believed to cause extension of the luteal lifespan. Two-dimensional, SDS-PAGE indicated that heat stress altered the array of proteins in endometrial and conceptus tissues, as evidenced by the induction of heat-shock proteins. Endometrial secretion of prostaglandin F and conceptus secretion of PGE2 increased in response to heat stress. The sensitivity of bovine conceptuses and endometrium to heat stress in vitro suggests that infertility assocd. with maternal heat stress may be caused, partially, by alterations in signals required for maintenance of the corpus luteum during **early pregnancy**.

L78 ANSWER 25 OF 56 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1988:202285 CAPLUS
DOCUMENT NUMBER: 108:202285
TITLE: Characterization of bovine **conceptus** proteins produced during the peri- and postattachment of **early pregnancy**
AUTHOR(S): Godkin, James D.; Lifsey, Ben J., Jr.; Gillespie, Barbara E.
CORPORATE SOURCE: Dep. Anim. Sci., Univ. Tennessee, Knoxville, TN, 37901-1071, USA
SOURCE: Biology of Reproduction (1988), 38(3), 703-11
CODEN: BIREBV; ISSN: 0006-3363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Bovine conceptuses removed from the uterus during the peri- and postattachment periods of placentation (days 17-24 and 26-38, resp.) were cultured in a modified min. essential medium in the presence of L-[3H]leucine to characterize in vitro synthesis of proteins released into the medium. Patterns of protein prodn. were analyzed by 2-dimensional PAGE followed by fluorog. of dried gels. Four groups of low-mol.-wt. acidic proteins (LMWAP) were obsd. to be synthesized during the peri- and postattachment periods. The no. and relative concn. of these changed with development. One group (A) consisted of 3 major and .gtoreq.2 minor isoelec. species (pI .simeq. 5.8-6.8); these were the major synthesized proteins obsd. from days 17-22. The major polypeptides of group A were present at all time points examd. through day 38 and, in several preps., appeared as doublets [mol. wt. (Mr) .simeq. 22,000 and 24,000] through day 29 but not thereafter. Group A polypeptides from day-19 and -36 conceptus cultures were demonstrated by immunoblot anal. to cross-react with antiserum produced against ovine trophoblast protein-1. A 2nd group of proteins (A1) and a single protein (B) in the 20,000-24,000-Mr range were obsd. between days 17 and 22. These were acidic relative to group A and were not detected after day 22. A 4th group (C) of LMWAP (Mr .simeq. 14,000-18,000) was first obsd. around day 21 and appeared to increase relative to group A through day 29. One

protein from this group, C3, was the predominant LMWAP at day 38. Prod'n. of numerous proteins in the 30,000-70,000-Mr range (group E) was first obsd. between days 21 and 24. Three of these, E7, E8, and E9, were acidic (pI .simeq. 5.0-5.8), with apparent mol. wts. of 30,000-45,000, and became prominent secretory products around day 29 and times thereafter. A very large (Mr >200,000) acidic (pI <4.5) protein was present from day 17 through at least day 29, and several large (Mr .gtoreq.100,000) were obsd. around day 24 and afterwards. Group A proteins have been referred to as bovine trophoblast protein-1 and implicated in events assocd. with maternal recognition of pregnancy. The present study is the first to demonstrate continued prodn. of these products beyond day 24, and to report qual. changes obsd. in bovine conceptus protein synthesis during the early postattachment period.

L78 ANSWER 26 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1989:1162 CAPLUS

DOCUMENT NUMBER: 110:1162

TITLE: Evidence for maternal regulation of **early conceptus** growth and development in beef cattle

AUTHOR(S): Garrett, J. E.; Geisert, R. D.; Zavy, M. T.; Morgan, G. L.

CORPORATE SOURCE: Anim. Sci. Dep., Oklahoma State Univ., Stillwater, OK, 74078, USA

SOURCE: Journal of Reproduction and Fertility (1988), 84(2), 437-46

CODEN: JRPFA4; ISSN: 0022-4251

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of progesterone administration on conceptus development, survival, and uterine endometrial secretion during **early pregnancy** in cattle was investigated. Fifty-one cyclic beef cows were mated with fertile bulls. At 36 h after the start of estrus, cows were assigned to receive sesame oil (controls) or progesterone (100 mg) on days 1, 2, 3, and 4 of pregnancy. The peripheral plasma concn. of progesterone was measured until slaughter on days 5 or 14. Cows were randomly assigned to be slaughtered on days 5 or 14 or remain intact and palpated per rectum on day 40 to verify pregnancy. Uteri on days 5 and 14 were flushed for recovery of luminal protein and conceptus tissue. Conceptus and endometrial tissues were cultured with [3H]leucine and submitted to 2-dimensional-**PAGE** and fluorog. Administration of progesterone increased peripheral plasma progesterone concn. on day 2-5. Conceptuses recovered from progesterone-treated cows on day 14 were advanced in development compared to conceptuses from control cows. Conceptuses recovered from progesterone-treated cows were viable as polypeptides assocd. with maintenance of pregnancy in cattle were synthesized and released at an earlier time and pregnancy was maintained beyond day 40. Early progesterone stimulation altered the synthesis and release of polypeptides from endometrial explant cultures on day 5. Apparently, progesterone plays a role in the maternal regulation of conceptus growth and development in **early pregnancy** of cattle.

L78 ANSWER 27 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1985:128366 CAPLUS

DOCUMENT NUMBER: 102:128366

TITLE: **Antigen associated** with **early** detection of mammalian **pregnancy**

INVENTOR(S): Sasser, R. Garth; Hamilton, William Clark

PATENT ASSIGNEE(S): Idaho Research Foundation, Inc., USA

SOURCE: Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 132750	A1	19850213	EP 1984-108365	19840716
EP 132750	B1	19900404		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4554256	A	19851119	US 1983-516173	19830721
AU 8430708	A1	19850124	AU 1984-30708	19840716
AU 567747	B2	19871203		
CA 1235657	A1	19880426	CA 1984-458998	19840716
AT 51709	E	19900415	AT 1984-108365	19840716
US 4705748	A	19871110	US 1985-794932	19851104
PRIORITY APPLN. INFO.:			US 1983-516173	19830721
			EP 1984-108365	19840716

AB **Early pregnancy** in mammals, esp. farm animals and pets, is diagnosed by the detection of protein B, a placental membrane-assocd. protein of mol. wt. 47,000-53,000 and pI .apprx.4.0-4.4, in, e.g., milk, urine, and esp. serum by, e.g., double-antibody RIA. Thus, protein B was obtained from placental membranes of dairy and beef cows by homogenization, (NH₄)₂SO₄ pptn., anion-exchange chromatog. on DEAE-cellulose, and gel chromatog. on Bio-Gel A 0.5m. Purified protein B was conjugated to tetanus toxoid for the prodn. of antisera in rabbits and radioiodinated with ¹²⁵I for the prepn. of label. The 2nd antibody was sheep antirabbit .gamma.-globulin antiserum. In beef cows, the RIA for protein B agreed with the diagnosis by rectal palpation in 90 of 102 cases. The cut off for a pos. pregnancy test should be at least 0.15 ng and preferably at least .apprx.0.25 ng protein B/mL.

L78 ANSWER 28 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1982:1089 CAPLUS

DOCUMENT NUMBER: 96:1089

TITLE: Effects of the estrous cycle and **early pregnancy** on bovine uterine, luteal, and follicular responses

AUTHOR(S): Bartol, F. F.; Thatcher, W. W.; Bazer, F. W.; Kimball, F. A.; Chenault, J. R.; Wilcox, C. J.; Roberts, R. M.

CORPORATE SOURCE: Coll. Med., Univ. Florida, Gainesville, FL, 32611, USA

SOURCE: Biology of Reproduction (1981), 25(4), 759-76

CODEN: BIREBV; ISSN: 0006-3363

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Uterine, luteal, and follicular responses assocd. with the estrous cycle and **early pregnancy** in cattle were examd. Dairy and beef cattle were slaughtered either on day 4, 8, 12, 14, 16, or 19 postestrus (estrus = day 0). Corpus luteum (CL) wt., specific PGF₂.alpha. [551-11-1] binding by the luteal particulate fraction (100,000 g pellet), in vitro estradiol (I) [50-28-2] prodn. by the 2 largest follicles, total recoverable uterine luminal protein (TP), total recoverable immunoreactive uterine luminal PGF (TPGF), and peripheral plasma steroids were evaluated. In a parallel study, beef cattle were slaughtered either on day 8, 12, 14, 16, or 19 of pregnancy for measurements of TP, TPGF, and plasma steroids. Uterine luminal proteins, from cyclic and pregnant cattle (day 19), were subjected to SDS polyacrylamide gel electrophoresis (SDS-PAGE) for detn. of protein mol. wts. and protein profile characterization. In cyclic cattle, CL regression was not completed by day 19. Follicle I secretion varied among animals within single day (4.0-24.0 ng

I/follicle/3.5 h); but not among several days. Total PGF2.alpha. binding (fmol/CL) for days 4, 8, 12, 14, 16, and 19 was 14.29, 145.79, 177.34, 111.82, 174.51, and 199.17 resp. TPGF varied among cycle days 4 (14.4 ng), 8 (13.9 ng), 12 (19.7 ng), 14 (47.7 ng), 16 (17.4 ng), and 19 (111.0 ng). In contrast, TPGF from pregnant cattle was 481.6 and 1187.8 ng on day 16 and 19. TP (mg) in cyclic cattle varied among days 4 (7.34), 8 (7.03), 12 (4.14), 14 (15.92), 16 (5.88), and 19 (11.35). Mean TP (mg) for pregnant cattle ranged 2.73-12.09. Thirty-two protein categories were identified in cyclic cattle uterine flushings by SDS-PAGE (apparent mol. wt. range .times. 10⁻³ = 18.7-292.0). Proteins appeared with greater frequency later in the cycle than earlier (days 14, 16, 19: 60% vs. days 4; 8, 12: 45%). Composite SDS-PAGE profiles from days 8-12 and days 14-16 differed, suggesting luteal phase stimulation of protein secretion. Protein profiles (SDS-PAGE) from day 19 of pregnancy differed from day 19 of the estrous cycle, resembled those of midluteal phase, and revealed 4 protein constituents possibly unique to **early pregnancy**. Thus, uterine luminal PGF increased with luteal phase of the estrous cycle at a time when there appeared to be a stable population of specific PGF2.alpha. binding sites in the CL. Higher PGF in utero at days 16 and 19 of pregnancy and changes in TP and SDS-PAGE protein profiles may reflect responsiveness of endometrium to changes in ovarian status (cyclic) and(or) conceptus activity (pregnancy comparisons).

L78 ANSWER 29 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 4
 ACCESSION NUMBER: 2000398143 EMBASE
 TITLE: Caprine pregnancy-associated glycoproteins (PAG):
 Their cloning, expression, and evolutionary relationship to
 other PAG.
 AUTHOR: Garbayo J.M.; Green J.A.; Manikkam M.; Beckers J.-F.;
 Kiesling D.O.; Ealy A.D.; Roberts R.M.
 CORPORATE SOURCE: R.M. Roberts, Department of Animal Sciences, University of
 Missouri, 158 ASRC, Columbia, MO 65211, United States.
 RobertsRM@missouri.edu
 SOURCE: Molecular Reproduction and Development, (2000) 57/4
 (311-322).
 Refs: 42
 ISSN: 1040-452X CODEN: MREDEE
 COUNTRY: United States
 DOCUMENT TYPE: Journal; Article
 FILE SEGMENT: 010 Obstetrics and Gynecology
 021 Developmental Biology and Teratology
 029 Clinical Biochemistry
 LANGUAGE: English
 SUMMARY LANGUAGE: English

AB Pregnancy-associated glycoproteins (PAG) are structurally related to aspartic proteinases and belong to an extensive, rapidly evolving family of recently duplicated genes expressed in the placentas of artiodactyl species. The aim of the present study was to clone PAG from the goat, study their temporal and cell-specific expression, and determine their phylogenetic relationship to PAG from other species. RT-PCR was used to generate PAG cDNA from pooled placental RNA obtained between days 45 and 115 of pregnancy. A total of 11 cDNA, which differed by > 5% from each other, were selected for complete bidirectional sequencing from 60 clones analyzed. A group of nine (caPAG1, caPAG3-7(van) caPAG9-11), which displayed >80% sequence identity with each other, were expressed after day 45 of pregnancy and were localized to trophoblast binucleate cells. These PAG demonstrated an unusually high ratio of nonsynonymous (amino acid changing) to synonymous nucleotide differences. CaPAG2, by contrast, was detectable only in **early pregnancy** (days 18 and 19) and expressed throughout trophectoderm. It was of more ancient origin than

the PAG1 group; but more recent than caPAG8. The latter was expressed at all stages examined (days 18 to 115). The data confirm that many PAG genes, with different patterns of temporal and spatial expression, are transcribed in the placenta of the goat. The data also suggest that the recently duplicated PAG genes are being selected for rapid diversification of function. (C) 2000 Wiley-Liss, Inc.

L78 ANSWER 30 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 8
 ACCESSION NUMBER: 96070337 EMBASE
 DOCUMENT NUMBER: 1996070337
 TITLE: Sulfated glycoprotein-1 (SGP-1) expression in ovine endometrium during the oestrous cycle and **early pregnancy**.
 AUTHOR: Spencer T.E.; Graf G.H.; Bazer F.W.
 CORPORATE SOURCE: Dept. of Animal Science, Center for Animal Biotechnology, Texas A and M University, College Station, TX 77843-2471, United States
 SOURCE: Reproduction, Fertility and Development, (1995) 7/5 (1053-1060).
 ISSN: 1031-3613 CODEN: RFDEEH
 COUNTRY: Australia
 DOCUMENT TYPE: Journal; Article
 FILE SEGMENT: 021 Developmental Biology and Teratology
 029 Clinical Biochemistry
 LANGUAGE: English
 SUMMARY LANGUAGE: English
 AB This study determined effects of day of oestrous cycle and **early pregnancy** on sulfated glycoprotein-1 (SGP-1) expression in ovine endometrium. A 364-bp clone of the ovine SGP-1 mRNA was amplified from reverse transcribed Day-15 cyclic endometrial mRNA using the polymerase chain reaction (PCR) and primers specific for the rat SGP-1 mRNA sequence. Nucleotide sequence of the ovine SGP-1 cDNA shared significant identity with rat SGP-1 and human prosaposin. Ewes (n = 40) were hysterectomized on either Day 1, 6, 11, 13 or 15 of the oestrous cycle or on Day 11, 13, 15, 17 or 25 of **early pregnancy**. Total cellular RNA was isolated from endometrium and subjected to Northern and slot blot hybridization analyses using an antisense cRNA probe transcribed from the ovine SGP-1 cDNA clone. A single 2.6-kb mRNA transcript was detected by Northern hybridization analyses. Slot blot hybridization analyses indicated that steady-state levels of endometrial SGP-1 mRNA varied during the oestrous cycle (cubic, $P < 0.02$) and increased between Day 11 and Day 25 of **early pregnancy** (linear, $P < 0.01$). On Days 11, 13 and 15, endometrial SGP-1 mRNA levels were greater in pregnant ewes than in cyclic ewes (day x pregnancy status, $P < 0.01$). Immunohistochemical localization of SGP-1 in uterine tissues with rabbit anti-rat SGP-1 antibody revealed intense immunoreactivity associated primarily with the endometrial epithelium. These results indicate that the ovine endometrium expresses SGP-1, a prosaposin, and that SGP-1 expression varies during the oestrous cycle and is enhanced by the conceptus. The presence of SGP-1 in the endometrium suggests intracellular and extracellular roles for this protein in glycosphingolipid metabolism or transport in the uterine environment.

L78 ANSWER 31 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 9
 ACCESSION NUMBER: 93056006 EMBASE
 DOCUMENT NUMBER: 1993056006
 TITLE: An estrogen-dependent glycoprotein is synthesized and released from the oviduct in a temporal- and region-specific manner during **early pregnancy** in the ewe.
 AUTHOR: Murray M.K.

CORPORATE SOURCE: Anatomy/Cellular Biology Department, Tufts University, 136 Harrison Avenue, Boston, MA 02111, United States

SOURCE: Biology of Reproduction, (1993) 48/3 (446-453).
ISSN: 0006-3363 CODEN: BIREBV

COUNTRY: United States

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 003 Endocrinology
021 Developmental Biology and Teratology
029 Clinical Biochemistry

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Administration of estradiol-17 β . (E) to ovariectomized (ovx) sheep results in the synthesis and release of an M(r) 90 000-92 000 glycoprotein into the oviductal lumen and into culture medium of ampullar explants (Biol Reprod 1992; 47:889-902). The objective of this study was to determine when and from what region of the oviduct the M(r) 90 000-92 000 glycoprotein is synthesized and released during **early pregnancy**. Estrous ewes were bred to intact rams of known fertility, and oviducts were obtained at estrus (Day 0) and at Days 1.5, 2, 3, 4, 6, and 16 of pregnancy. Pregnancy was verified by the presence of a fertilized egg or developing conceptus and a functional corpus luteum. Oviductal secretions were collected by flushing oviducts with saline and by explant culture. The oviductal fimbria, ampulla, and isthmus were individually cultured (24 h) in the presence of 3H-leucine (3H-leu) or 3H-glucosamine (3H-glcN). The presence of the M(r) 90 000-92 000 glycoprotein in oviductal flushings and culture medium was determined by fluorography and Western blotting. The M(r) 90 000-92 000 protein was present in SDS gels and blots of oviductal flushings from animals through Days 4-6 of pregnancy, but not in flushings from Day 16 pregnant animals or from ovx, untreated animals. This protein was present in 3H-leu- and 3H-glcN-labeled culture medium of the oviductal ampulla (Days 0, 1.5, 2, 3, 4, 6, and 16) and fimbria (Days 0, 1.5, 2, 3, and 4) during **early pregnancy**. The M(r) 90 000-92 000 protein was not detected in oviductal ampulla or fimbria culture medium obtained from ovx animals, nor was it present in culture medium of the isthmus oviduct obtained from estrous and pregnant animals. These data show that the E-dependent M(r) 90 000-92 000 glycoprotein is synthesized and released by the oviduct in a temporally and regionally specific manner during **early pregnancy** as the gametes and fertilized egg are traversing the tube and prior to a systemic rise in progesterone.

L78 ANSWER 32 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 2003101137 EMBASE

TITLE: Effects of Gram-positive bacterial pathogens in ewes: Peptidoglycan as a potential mediator of interruption of **early pregnancy**.

AUTHOR: Stewart A.B.; Inskeep E.K.; Townsend E.C.; Dailey R.A.

CORPORATE SOURCE: R.A. Dailey, Div. of Animal/Veterinary Sciences, West Virginia University, PO Box 6108, Morgantown, WV 26506-6108, United States. rdailey@wvu.edu

SOURCE: Reproduction, (1 Feb 2003) 125/2 (295-299).
Refs: 34
ISSN: 1470-1626 CODEN: RCUKBS

COUNTRY: United Kingdom

DOCUMENT TYPE: Journal; General Review

FILE SEGMENT: 003 Endocrinology
004 Microbiology
021 Developmental Biology and Teratology

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Bacterial cell walls contain peptidoglycan (PTG), which, among other

actions, induces fever. The present experiment evaluated the effects of PTG treatment on **early pregnancy** and blood plasma concentrations of reproductive hormones. Ewes were injected i.v. with saline or 15, 30 or 60 $\mu\text{g kg}^{-1}$ sonicated PTG (*Streptococcus pyogenes*) on day 5 after mating. Each dose of PTG induced fever. Pregnancy rate at day 25 was not related to incidence of fever but tended to differ among treatments (control, 100%; low, 100%; medium, 67%; high, 60%; $P < 0.08$). Combined pregnancy rate in ewes from control and low dose groups (100%) was greater than that in ewes from medium and high dose groups (64%, $P < 0.01$). Ewes with high 13, 14-dihydro-15-keto-prostaglandin F(2.alpha.) (PGFM) concentrations had lower pregnancy rates (6 of 10) than those with low concentrations of PGFM (11 of 11; $P < 0.05$). Mean cortisol concentrations were higher in treated ($2.8 \pm 0.28 \mu\text{g dl}^{-1}$) than in control ($1.1 \pm 0.03 \mu\text{g dl}^{-1}$) ewes ($P < 0.01$); the pattern of secretion was biphasic and increased in all treated ewes ($P < 0.01$). Neither means nor profiles of oestradiol differed with treatment. Mean concentrations and the pattern of concentrations of progesterone were reduced in all treated ewes, as indicated by the time by treatment and linear interaction with treatment (1.2 ± 0.1 versus $1.6 \pm 0.1 \text{ ng ml}^{-1}$, $P < 0.01$). Patterns of LH pulses did not differ from 0 to 4 h or 24 to 28 h after treatment; mean plasma LH concentration was lower in ewes treated with 0, 15 or 30 $\mu\text{g PTG kg}^{-1}$ than with 60 $\mu\text{g PTG kg}^{-1}$ ($P < 0.01$). Pregnancy status was not related to plasma concentrations or patterns of LH, oestradiol, progesterone or cortisol. Inflammatory mediators, such as PGF(2.alpha.), may act directly on the embryo or uterus in ewes treated with PTG.

L78 ANSWER 33 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2002:457053 BIOSIS

DOCUMENT NUMBER: PREV200200457053

TITLE: Sequential expression of **specific** genes during **early pregnancy** of somatic-cell clone-recipient cows.

AUTHOR(S): Kizaki, Keiichiro (1); Ishiwata, Hiroko (1); Hirasawa, Akira; Shiojima, Satoshi; Katsuma, Susumu; Ikawa, Hiroshi; Imai, Kei (1); Takahashi, Toru (1); Takahashi, Seiya; Akagi, Satoshi; Tsujimoto, Gozo; Hashizume, Kazuyoshi (1)

CORPORATE SOURCE: (1) Department of Developmental Biology, National Institute of Agrobiological Sciences, Tsukuba Japan

SOURCE: Biology of Reproduction, (2002) Vol. 66, No. Supplement 1, pp. 242-243. print.

Meeting Info.: 35th Annual Meeting of the Society for the Study of Reproduction Baltimore, Maryland, USA July 28-31, 2002

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 34 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2002:405833 BIOSIS

DOCUMENT NUMBER: PREV200200405833

TITLE: Abnormal expression of trophoblast major histocompatibility complex class I **antigens** in cloned **bovine pregnancies** is associated with a pronounced endometrial lymphocytic response.

AUTHOR(S): Hill, Jonathan R. (1); Schlafer, Donald H.; Fisher, Patricia J.; Davies, Christopher J.

CORPORATE SOURCE: (1) Department of Clinical Sciences, College of Veterinary Medicine, Cornell University, Box 34, Ithaca, NY, 14853-6401: jrh35@cornell.edu USA

SOURCE: Biology of Reproduction, (July, 2002) Vol. 67, No. 1, pp.

55-63. print.
ISSN: 0006-3363.

DOCUMENT TYPE: Article
LANGUAGE: English

AB Early embryonic losses are much higher in nuclear transfer (cloned) pregnancies, and this is a major impediment to improving the efficiency of cloned animal production. In **cattle**, many of these losses occur around the time of placental attachment from the fourth week of gestation. We studied the potential for altered immunologic status of cloned pregnancies to be a contributing factor to these embryonic losses. Expression of major histocompatibility complex class I (MHC-I) by trophoblast cells and distribution of endometrial T-lymphocyte numbers were investigated. Six 5-wk-old cloned pregnancies were generated, and 2 others at 7 and 9 wk were also included, all derived from the same fetal cell line. All 8 cloned placentas displayed trophoblast MHC-I expression. None of the 8 controls (4-7 wk old) showed any MHC-I expression. The percentage of trophoblast cells expressing MHC-I varied in the clones from 17.9% to 56.5%. Numbers of T lymphocytes (CD3+ lymphocytes) were significantly higher in the endometrium of the majority of cloned pregnancies compared with controls. In the cloned pregnancies, large aggregates of T cells were frequently observed in the endometrium in addition to increased numbers of diffusely spread subepithelial lymphocytes. As trophoblast MHC-I expression is normally suppressed during early gestation, the observed MHC-I expression in the cloned pregnancies is likely to have induced a maternal lymphocytic response that would be detrimental to maintaining viability of the cloned pregnancy. These findings support a role for immunologic rejection in the syndrome of early embryonic loss in cloned **bovine** pregnancies.

L78 ANSWER 35 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2001:426213 BIOSIS

DOCUMENT NUMBER: PREV200100426213

TITLE: Assessment of a commercially available **Early** Conception Factor (ECF) test for determining pregnancy status of dairy **cattle**.

AUTHOR(S): Cordoba, M. C.; Sartori, R.; Fricke, P. M. (1)

CORPORATE SOURCE: (1) Department of Dairy Science, University of Wisconsin, Madison, WI, 53706: fricke@calshp.cals.wisc.edu USA

SOURCE: Journal of Dairy Science, (August, 2001) Vol. 84, No. 8, pp. 1884-1889. print.
ISSN: 0022-0302.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB The Early Conception Factor (ECF) test is a commercially available qualitative assay that reportedly detects a pregnancy-associated **glycoprotein** present in **bovine** serum within 48 h after conception. One concern with previous assessments of this test is that animals with viable embryos **early** during **pregnancy** that subsequently undergo embryonic loss before pregnancy diagnosis increase the rate of false-positive results and bias the assessment. To preclude this possibility, noninseminated Holstein cows (n=9) and heifers (n=8) were evaluated as an unequivocal source of nonpregnant animals, and Holstein cows (n=17) and heifers (n=1) inseminated at estrus and in which at least one embryo of transferable quality was recovered at a nonsurgical flush 6 d after artificial insemination were evaluated as an unequivocal source of pregnant animals. Blood samples were collected from all animals 6 d after estrus, which was immediately before embryo collection in pregnant animals. Each serum sample was evaluated using two ECF test cassettes (tests 1 and 2), and the result of each test cassette was interpreted by two independent readers (readers 1 and 2). Test

sensitivity, specificity, positive predictive value, negative predictive value, and accuracy were 86, 4, 49, 23, and 46%, respectively. Although the observed agreement between readers (91% for test 1; 89% for test 2) and between tests for the same serum sample (94% for reader 1; 91% for reader 2) was high, the overall rates of false-positive and false-negative ECF test results were 96 and 14%, respectively. We conclude that the ECF test is an unreliable method for determining pregnancy status of dairy cattle on day 6 after estrus.

L78 ANSWER 36 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1999:540023 BIOSIS

DOCUMENT NUMBER: PREV199900540023

TITLE: **Early pregnancy diagnosis** in goats by determination of pregnancy-associated **glycoprotein** concentrations in plasma samples.

AUTHOR(S): Gonzalez, F. (1); Sulon, J.; Garbayo, J. M.; Batista, M.; Cabrera, F.; Calero, P.; Gracia, A.; Beckers, J. F.

CORPORATE SOURCE: (1) Reproduction and Obstetrics, Faculty of Veterinary, University of Las Palmas de Gran Canaria, Arucas, 35416, Las Palmas Spain

SOURCE: Theriogenology, (Sept., 1999) Vol. 52, No. 4, pp. 717-725. ISSN: 0093-691X.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Different RIA systems available for measuring the concentrations of pregnancy-associated **glycoproteins** (PAGs) in dairy goats were compared in order to evaluate their accuracy in **early pregnancy** diagnosis. Plasma concentrations of PAGs were determined by 3 heterologous RIA systems with a **bovine** PAG standard and tracer in combination with antisera anti-ovine PAG (RIA 1), anti-caprine PAG55+62 (RIA 2), anti-caprine PAG55+59 (RIA 3), and by 2 homologous RIA systems that employed caprine PAG55+62 and caprine PAG55+59 and their specific antisera (RIAs 4 and 5, respectively). In all of the RIAs, the mean concentrations of PAGs were significantly higher ($P < 0.01$) in pregnant than in nonpregnant goats from Day 21 onwards after breeding. On Day 21, the accuracy rates of **early pregnancy** diagnoses were 56% (RIA 1), 96% (RIA 2), 99% (RIA 3), 95% (RIA 4) and 90% (RIA 5), whereas on Day 28 these rates were $>99\%$ for RIAs 2, 3, 4 and 5. The RIAs for PAGs depend on proteins from the placenta being present in maternal plasma and require only a single sample of blood, to distinguish pregnant goats from those that fail to return to estrus for other reasons. The homologous and semi-heterologous assays are highly accurate as **early** as Day 21 of **pregnancy**.

L78 ANSWER 37 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1997:407583 BIOSIS

DOCUMENT NUMBER: PREV199799713786

TITLE: Recent developments and potentialities for reducing embryo mortality in **ruminants**: The role of IFN-tau and other cytokines in **early pregnancy**.

AUTHOR(S): Martal, J. (1); Chene, Nicole; Camous, Sylvaine; Huynh, L.; Lantier, F.; Hermier, Paloma; L'Haridon, R.; Charpigny, G.; Charlier, Madio; Chaouat, G.

CORPORATE SOURCE: (1) Unite d'Endocrinologie de l'Embryon, Station de Physiologie Animale, INRA, 78352 Jouy-en-Josas Cedex France

SOURCE: Reproduction Fertility and Development, (1997) Vol. 9, No. 3, pp. 355-380.

ISSN: 1031-3613.

DOCUMENT TYPE: General Review

LANGUAGE: English

AB This review considers the potential reduction of embryo mortality in vitro and in vivo in **ruminants**. Data on cytokines provided by different fields of reproductive immunology and biology were collated. Because of the crucial importance of the local interactions between the embryo and its dam, the expression of growth-factor and cytokine genes was analysed in the embryo proper, trophoblast, oviduct and endometrium by reverse transcriptase polymerase chain reaction in sheep and in **cattle** during the pre- and periimplantation periods. Many deleterious cytokines, such as tumour necrosis factor-alpha, interferon-gamma (IFN-gamma), interleukin-2 (IL-2), and beneficial cytokines, such as transforming growth factor-beta, leukaemia inhibiting factor, colony-stimulating factor-1 (CSF-1), granulocyte-macrophage CSF, IL-1, IL-3, IL-4, IL-6, IL-10 and IFN-tau appeared to be involved in embryo survival in **ruminants** and other species. Their administration is efficient in a murine experimental model (CBA/J times DBA/2) of embryonic and fetal mortality. For instance, recombinant ovine IFN-tau (roIFN-tau) injected at the moment of implantation drastically reduces embryonic mortality in this model. In **ruminants**, roIFN-tau and recombinant **bovine** IFN-tau are very efficient in maintaining progesterone luteal secretion in cyclic animals. The involvement of IFN-tau in the mechanisms of maternal pregnancy recognition are particularly detailed in relation to inhibition of 13,14-dihydro-15-keto-prostaglandin F-2alpha (PGFM) pulses and oxytocin uterine receptivity. A synthetic model of the anti-luteolytic effects of IFN-tau on the endometrial cell is proposed. Finally, the particular potential of serum pregnancy-specific proteins (PSPs: PSPB, PSP60, pregnancy-associated **glycoprotein**) for monitoring embryo survival, with examples given for **cattle** and sheep is underlined.

L78 ANSWER 38 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:417573 BIOSIS

DOCUMENT NUMBER: PREV199598431873

TITLE: Isolation and partial characterization of an ovine Pregnancy-Associated **Glycoprotein** (oPAG)

AUTHOR(S): Zoli, A. P. (1); Beckers, J. F.; Ectors, F.

CORPORATE SOURCE: (1) Serv. Physiol. Pathol. Reprod., Fac. Med. Veterinaire de l'Univ. de Liege Bd de Colonster 20, P. 71 B. 41, B-4000 Liege 1. Belgium

SOURCE: Annales de Medecine Veterinaire, (1995) Vol. 139, No. 3, pp. 177-184.

ISSN: 0003-4118.

DOCUMENT TYPE: Article

LANGUAGE: French

SUMMARY LANGUAGE: French; English

AB Isolation and partial characterization of an ovine Pregnancy-Associated **Glycoprotein** (oPAG) An ovine Pregnancy-Associated **Glycoprotein** (oPAG) has been isolated from fetal cotyledons by the means of ammonium sulfate precipitations and different liquid chromatographies. The **bovine** PAG was used as standard and tracer to monitor the oPAG in each step of isolation. Ovine PAG seems to be an heterogeneous group of **glycoproteins** of molecular mass ranging from 47 to 67 kD. Molecular cloning of its cDNA revealed that ovine and **bovine** PAG share 86% nucleotide sequence identity and both belong to the aspartic proteinase family (gtoreq 50% amino acid sequence identity to pepsin and cathepsins D and E). However neither **bovine** nor ovine PAGs do not appear to be enzymatically active. The oPAG's cDNA codes for a polypeptide of 382 amino acids long that is synthesized by trophoblastic binucleate cells since day 18 post conception and detected in maternal circulation since day 24 p.c. The detection of oPAG could be

used for **early** diagnosis of **pregnancy** and determination of **early** embryonic mortality in sheep and other domestic and wild **ruminants**.

L78 ANSWER 39 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:165689 BIOSIS

DOCUMENT NUMBER: PREV199598179989

TITLE: Data to the **early pregnancy diagnosis** by ultrasonography in **cattle**, pigs and horses: Short second communication.

AUTHOR(S): Szenci, Otto

CORPORATE SOURCE: Istvan u. 2, Budapest H-1078 Hungary

SOURCE: Magyar Allatorvosok Lapja, (1995) Vol. 50, No. 1, pp. 25-26.

ISSN: 0025-004X.

DOCUMENT TYPE: Article

LANGUAGE: Hungarian

SUMMARY LANGUAGE: Hungarian; English

AB Accurate and **early** detection of **pregnant** and nonpregnant animals has become a key to good breeding management because it is an essential factor for monitoring and controlling fertility in food animals and horses. One of the most recent techniques for **early pregnancy** diagnosis in **cattle**, pigs and horses on the farm is the B-mode ultrasonography. The author makes acquainted with the papers (4a-4d) published together with his coworkers and abstracts (4e-4i) presented at different congresses in English which deal with the accuracy of **early pregnancy** diagnosis in **cattle**, pigs and horses made by the first battery-operated, portable ultrasonic scanner. The scanner was made by a Hungarian invention in Canada. For detecting the pregnant/nonpregnant animals, the ultrasonic method gives a high accuracy: between the 25th to 29th day in the **cattle**, the 23rd to 24th day in pigs, after the artificial insemination, and between the 20th to 24th day in horses after the mating. In **cattle** the determination of **bovine** pregnancy associated **glycoprotein** may help in the detection of false diagnoses.

L78 ANSWER 40 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:431300 BIOSIS

DOCUMENT NUMBER: PREV199598445600

TITLE: Oviduct proteins in fertilization and **early** embryo development.

AUTHOR(S): Nancarrow, C. D.; Hill, J. L.

CORPORATE SOURCE: CSIRO Div. Anim. Prod., Clunies Ross St., Prospect, NSW, Locked Bag 1, Delivery Cent., Blacktown 2148 Australia

SOURCE: Journal of Reproduction and Fertility, (1995) Vol. 0, No. SUPPL. 49, pp. 3-13.

ISSN: 0022-4251.

DOCUMENT TYPE: Article

LANGUAGE: English

AB The oviduct controls the environment in which the gametes are transported and fuse, and in which embryonic development begins. The ultrastructural topography of the ampulla and isthmus is similar, consisting of ciliated and secretory cells, but a different array of proteins is secreted by each segment along with various serum components. Amino acids are selectively secreted by the oviduct; these amino acids probably interact with the gametes or embryo to facilitate the processes of fertilization and development. An oviduct-specific **glycoprotein** is synthesized by the ampulla of sheep and **cattle** in response to oestrogen and secreted mainly from day - 1 to day 3 of the ovarian cycle. This oestrus-associated **glycoprotein** (EGP) has a variable molecular mass of 80-97 kDa and a pI value ranging from 4.7 to 5.5. The

bovine (b) and ovine (o) EGP genes are 95.5% identical and consist of 1560 base pairs encoding 519 amino acids containing one N-linked and several O-linked glycosylation sites. The terminal glycosides are N-acetylglucosamine and galactose-N-acetylgalactosamine for bEGP, and fucose, galactose and sialic acid residues are also identified for oEGP. EGP binds to zona pellucida and blastomere membranes, but evidence for EGP binding to sperm membranes is equivocal. After in vitro fertilization the proportion of sheep oocytes cleaving was increased in the presence of oEGP, but when single-cell embryos were cultured with oEGP, these cleavage rates were reduced. In addition, consistent positive effects of oEGP were observed on blastocyst formation. Elaboration of the mechanism of synthesis of EGP, its action and its role in fertilization and embryo development is important for our understanding of the events of **early pregnancy**.

L78 ANSWER 41 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1994:381319 BIOSIS

DOCUMENT NUMBER: PREV199497394319

TITLE: An mRNA encoding an estrogen (E)-dependent oviduct-**specific glycoprotein** (Mr90-92,000) is expressed in a temporal and regional **specific** manner during **early pregnancy** in the sheep.

AUTHOR(S): Desouza, M. M.; Murray, M. K.

CORPORATE SOURCE: Tufts Univ., Boston, MA USA

SOURCE: Biology of Reproduction, (1994) Vol. 50, No. SUPPL. 1, pp. 96.

Meeting Info.: Twenty-seventh Annual Meeting of the Society for the Study of Reproduction Ann Arbor, Michigan, USA July 24-27, 1994

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 42 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1994:381183 BIOSIS

DOCUMENT NUMBER: PREV199497394183

TITLE: Expression of ovine sulfated **glycoprotein-1** (oSGP-1) and sulfated **glycoprotein-2** (oSGP-2) messenger RNA in ovine endometrium during the estrous cycle and **early pregnancy**.

AUTHOR(S): Graf, G. A.; Spencer, T. E.; Bazer, F. W.

CORPORATE SOURCE: Dep. Anim. Sci., Inst. Biosciences and Technol., Cent.

Anim. Biotechnol., Tex. A and M Univ., College Station, TX 77843-2471 USA

SOURCE: Biology of Reproduction, (1994) Vol. 50, No. SUPPL. 1, pp. 62.

Meeting Info.: Twenty-seventh Annual Meeting of the Society for the Study of Reproduction Ann Arbor, Michigan, USA July 24-27, 1994

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 43 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1988:437428 BIOSIS

DOCUMENT NUMBER: BA86:89526

TITLE: DIFFERENTIAL **GLYCOSYLATION** OF THE COMPONENTS OF THE **BOVINE** TROPHOBLAST PROTEIN-1 COMPLEX.

AUTHOR(S): HELMER S D; HANSEN P J; THATCHER W W

CORPORATE SOURCE: DAIRY SCI. DEP., UNIV. FLA., GAINESVILLE, FLA. 32611-0701,

U.S.A.
SOURCE: MOL CELL ENDOCRINOL, (1988) 58 (1), 103-107.
CODEN: MCEND6. ISSN: 0303-7207.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB The **bovine** trophoblast protein-1 complex, a major secretory product of the day 17 to 18 conceptus, has been implicated in extension of luteal lifespan during **early pregnancy**. This **glycoprotein** complex, identifiable by immunoprecipitation procedures utilizing rabbit antiserum to ovine trophoblast protein-1, exists as seven isomers of two size classes (22 and 24 kDa). Culture of embryos with tunicamycin demonstrated that the isomers are N-linked **glycoproteins**, as deglycosylated products migrate as a single band (18 kDa) during electrophoresis. Culture with deoxymannojirimycin indicated that the 24 kDa form is complex in nature, whereas treatment with endoglycosidase H and lectin chromatography indicated that the 22 kDa form is a high-mannose type **glycoprotein**. These results indicate that molecular weight variants of **bovine** trophoblast protein-1 arise as a single translation product that undergoes differential post-translational glycosylation.

L78 ANSWER 44 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1982:226742 BIOSIS
DOCUMENT NUMBER: BA73:86726
TITLE: EVALUATION AND MODIFICATION OF A RADIO IMMUNOASSAY FOR PREGNANCY **SPECIFIC** BETA-1 GLYCO PROTEIN.
AUTHOR(S): BONTE H A; VAN DER SLUIJS VEER G
CORPORATE SOURCE: STREEKZIEKENHUIS MIDDEN-TWENTE, AFDELING KONINGIN JULIANA, BOERHAAVELAAN 65, NL-7555 BB HENGELLO.
SOURCE: J CLIN CHEM CLIN BIOCHEM, (1981 (RECD 1982)) 19 (12), 1197-1200.
CODEN: JCCBDT. ISSN: 0340-076X.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB The radioimmunoassay available for pregnancy-specific .beta.1-**glycoprotein** (SP1) was tested for its ability to detect pregnancy prior to the 1st missed menstrual period. The equine serum, used as solvent for the standards, did not react like human serum. The standard solvent was replaced by **bovine** serum albumin, 50 g/l, and pooled human serum, respectively. Equilibrium and sequential incubation procedures were compared. The latter appeared to be more sensitive in the low value range and was more suitable for the **early** detection of **pregnancy**. With standards in albumin, the sequential assay was more specific. SP1 could be detected in sera of men and non-pregnant women using albumin as standard solvent. This could be due to different cross reacting material of the protein matrix or to the presence of SP1-like material in human sera. The choice of human male serum seemed most practical.

L78 ANSWER 45 OF 56 WPIDS (C) 2003 THOMSON DERWENT
ACCESSION NUMBER: 2001-218471 [22] WPIDS
DOC. NO. NON-CPI: N2001-155706
DOC. NO. CPI: C2001-065291
TITLE: Determining progesterone content of raw **milk**, useful for indicating the time of estrus and pregnancy, comprises contacting **milk** with a biosensor.
DERWENT CLASS: B04 C07 D16 S03
INVENTOR(S): ROOSENSCHOON, P L; VERSTEGE, A B M
PATENT ASSIGNEE(S): (NEDA) NEDAP NED APPARATENFAB NV
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001014887	A1	20010301	(200122)*	EN	16
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM					
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC					
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE					
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
NL 1012859	C2	20010226	(200129)		
AU 2000066013	A	20010319	(200136)		
EP 1232397	A1	20020821	(200262)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001014887	A1	WO 2000-NL580	20000821
NL 1012859	C2	NL 1999-1012859	19990819
AU 2000066013	A	AU 2000-66013	20000821
EP 1232397	A1	EP 2000-953588	20000821
		WO 2000-NL580	20000821

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000066013	A Based on	WO 200114887
EP 1232397	A1 Based on	WO 200114887

PRIORITY APPLN. INFO: NL 1999-1012859 19990819

AB WO 200114887 A UPAB: 20010421

NOVELTY - Determining the amount of progesterone (I) in raw milk of **cows** comprising contacting the milk with a biosensor, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a system comprising a biosensor connected to a computer for performing the new method; and

(2) use of a biosensor for determining the amount of (I) in raw milk of **cows**.

USE - The method and biosensor are particularly applied to **cows** and are used to indicate when they are in heat (for timing of insemination) or in-calf (detecting an **early pregnancy**), or if they have some defect in the reproductive system (claimed).

ADVANTAGE - The method provides automated, reliable and inexpensive determination of (I) content, over the whole of the concentration range 0-40 ng/ml.

Dwg.0/3

L78 ANSWER 46 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 2002-130122 [17] WPIDS

CROSS REFERENCE: 2001-147510 [15]

DOC. NO. NON-CPI: N2002-098166

DOC. NO. CPI: C2002-039874

TITLE: New therapeutic MA **polypeptides** corresponding to human chorionic gonadotrophin peptides, useful for treating and preventing cancers, pathological angiogenesis and loss of body cell mass.

DERWENT CLASS: B04 D16 S03
 INVENTOR(S): BRYANT, J; GALLO, R; LUNARDI-ISKANDAR, Y
 PATENT ASSIGNEE(S): (UYMA-N) UNIV MARYLAND BIOTECHNOLOGY INST
 COUNTRY COUNT: 95
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001011048	A2	20010215	(200217)*	EN	209
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000068947	A	20010305	(200217)		
EP 1250438	A2	20021023	(200277)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001011048	A2	WO 2000-US21499	20000805
AU 2000068947	A	AU 2000-68947	20000805
EP 1250438	A2	EP 2000-957310	20000805
		WO 2000-US21499	20000805

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000068947	A Based on	WO 200111048
EP 1250438	A2 Based on	WO 200111048

PRIORITY APPLN. INFO: US 2000-188777P 20000313; US 1999-147825P
 19990806

AB WO 200111048 A UPAB: 20021129
 NOVELTY - A therapeutic polypeptide (I) selected from MA (undefined), pro MA (pMA) and other fully defined sequences as given in the specification, is new.

DETAILED DESCRIPTION - (I) selected from an isolated polypeptide:
 (a) consisting of MA or pro MA (pMA);
 (b) comprising fully defined sequences of peptide MA, pMA, MA(S1), MA(S2), MA(S3), MA(S5), MA(S9), MA(S10), or MA(S11) (P1-7) (synthetic mimetics of MA peptides), beta human chorionic gonadotrophin (beta hCG) 55-58, beta hCG 55-90, beta hCG 55-91, beta hCG 55-74, beta hCG 6-37, beta hCG 6-39, or beta hCG 6-40 (P8-11); or
 (c) functional equivalents of (a) or (b), is new.

INDEPENDENT CLAIMS are also included for the following:
 (1) a fusion polypeptide comprising (2 or more) (I) joined via a covalent bond to a heterologous polypeptide;
 (2) a peptide isolated from **early pregnancy** urine comprising MA/pMA;
 (3) an isolated nucleic acid (II) encoding (I);
 (4) an expression vector (III) comprising (II) operably linked to a promoter;
 (5) a cell (IV) comprising (III);
 (6) an isolated antibody (V) or its fragment which specifically binds to (I);

(7) a cell producing (V), produced by fusion of an immortal cell line to an immunoglobulin-cell producing plasma cell producing the monoclonal antibody;

(8) an anti-idiotypic antibody which binds to a variable domain or (V);

(9) a fragment of HUSI-II (undefined) comprising an SH3 motif and flanking residues e.g., 40-46, 40-60, 40-59, 40-58, 40-66, 40-67, 40-68;

(10) expanding (M1) blood cells in vitro comprising contacting blood cells with (I);

(11) providing (M2) blood cells comprising administering the blood cells expanded by M1;

(12) detecting (M3) MA/pMA in a biological sample;

(13) purifying (M4) MA/pMA in a biological sample;

(14) producing (M5) a peptide library for screening for a therapeutic effect from anti-human immunodeficiency virus (HIV) effects, anti-cancer effects, anti-wasting effects, radioprotective effects, anti-angiogenic effects, anti-inflammatory effects and pro-hematopoietic effects; and

(15) identifying (M6) peptide having one or more of anti-HIV effect, anti-cancer effect, anti-wasting effect, radioprotective effect, and pro-hematopoietic effect.

ACTIVITY - Anti-HIV; cytostatic; virucide; antibacterial; antirheumatic; antiarthritic; antidiabetic; immunosuppressive; hepatotrophic; neuroprotective; antiinflammatory; dermatological; antianemic; antidiarrheic; vulnerary; vasotropic; osteopathic; immunostimulant; antiparasitic; fungicide; ophthalmological. Simian immunodeficiency virus (SIV)(MAC251) induces disease in rhesus monkeys similar to acquired immunodeficiency syndrome (AIDS) in humans only with much greater rapidity. Therapy with purified MA of 3 monkeys with end-stage disease infected 13-14 mos earlier was initiated when the animals were losing weight, highly viremic (plasma virus 0.5 to 3 multiply 10 to the power of 6 copies of SIV RNA/ml by nucleic acid sequence based amplification (NASBA)), and developing pancytopenia. Treatment of these monkeys with end-stage AIDS with MA at 0.2 mg/kg dose 3 times weekly produced no significant change in SIV titer over 6 mos. observation period. However, in this period none of the 3 animals died. In contrast, most untreated animals died by this period. Also crude urinary preparations containing MA, but not crude fractions lacking MA, were inoculated subcutaneously. Using a 10 to the power of (4.5) TCID₅₀ of cell free SIV(mac251), the characteristic rise in SIV P27, reduction of CD4+T-cells, and weight loss, which occurred in the untreated animals, was prevented in MA treated animals. The untreated animals died before 6 mos. The treated animals were maintained for 7 mos without weight loss, with normal CD4+ T-cell counts, and barely detectable plasma p27 (less than 5 ng/ml in contrast to over 200 ng/ml in control animals). However, stopping therapy led to rapid onset of virus production and development of AIDS-like disease.

MECHANISM OF ACTION - Angiogenesis inhibitor; gene therapy.

USE - (I) is useful for inhibiting HIV replication. (I) is useful for treating or preventing:

(a) human immunodeficiency virus (HIV) infection;

(b) cancer such as brain, breast, lung, pancreatic, prostate or renal cancer, or hematopoietic malignancy, preferably Kaposi's sarcoma where (I) is administered:

(i) in conjunction with radiation therapy; or

(ii) prior to, contemporaneously with or after anticancer chemotherapy, or radiation therapy;

(c) a condition characterized by loss of body cell mass in a subject, such as wasting associated with HIV infection, cancer, or hematopoietic deficiency;

(d) a condition associated with pathological angiogenesis, e.g., angiogenesis associated with neoplasm; or

(e) hematopoietic deficiency:

(i) resulting from failure or dysfunction of normal blood cell production and/or maturation; or

(ii) associated with neoplastic disease of a hematopoietic origin, malignancy, malignant disease of hematopoietic organ, autoimmune condition, trauma, radiation exposure (associated with medical therapy or anticancer therapy, where the polypeptide is administered prior to, after or contemporaneously with the radiation).

(I) is also useful in ex vivo gene therapy which involves removing cells from the subject, treating the cells with a pro-hematopoietic polypeptide to provide an expanded and/or differentiated set of cells, where the pro-hematopoietic polypeptide is (I), transforming cells and/or expanded and/or differentiated cells with a therapeutic expression vector to provide transformed cells, and returning transformed cells to the subject. The method further involves increasing the blood count of at least one class of blood cells in the subject by administering to the subject (I). The therapeutic vector used in the above mentioned method expresses a polypeptide which is dysfunctional or lacking in the subject, or a polypeptide which produces a therapeutic effect in the subject. The cells which are removed from the subject are preferably hematopoietic cells (all claimed). (I) is also useful for treating bacterial infections, chronic diarrhea, anemia, autoimmune disease, rheumatoid arthritis, diabetes, chronic hepatitis, systemic lupus erythematosus, wound, burn, inflammation (especially of the cornea), osteoporosis, parasitic infections and fungal infections.

Dwg.0/17

L78 ANSWER 47 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 2000-587225 [55] WPIDS
 DOC. NO. NON-CPI: N2000-434606
 DOC. NO. CPI: C2000-175057
 TITLE: Composition for testing **bovine pregnancy**, comprises antibody to an **early pregnancy** factor conjugated to a **label**.
 DERWENT CLASS: B04 C07 D16 P32
 INVENTOR(S): FRUSHOUR, S L M; JONES, K D; PEARSON, M; SLOWIKOWSKI, E
 PATENT ASSIGNEE(S): (KEMS-N) KEMS BIO-TEST LTD
 COUNTRY COUNT: 89
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000051520	A2	20000908	(200055)*	EN	46
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL					
OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES					
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS					
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL					
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2000035119	A	20000921	(200065)		

APPLICATION DETAILS:

PATENT NO.	KIND	APPLICATION	DATE
WO 2000051520	A2	WO 2000-US5616	20000302
AU 2000035119	A	AU 2000-35119	20000302

FILING DETAILS:

PATENT NO	KIND	PATENT NO

 AU 2000035119 A Based on WO 200051520

PRIORITY APPLN. INFO: US 1999-122400P 19990302

AB WO 200051520 A UPAB: 20001102

NOVELTY - A composition (I) for testing pregnancy of an animal, comprises an antibody to an **early pregnancy** factor (EPF) of an animal conjugated to a label.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a test device (II) for detecting an animal EPF, comprising:

(a) a porous solid phase material capable of conveying a liquid sample in a fluid flow direction generally parallel to the length of the test device;

(b) sample receiving zone within the porous solid phase material, where the sample and other assay reagents may be contacted with the device; and

(c) an antibody zone within the porous solid phase material, comprising an immobilized antibody to the EPF of the animal disposed at a downstream location from the sample receiving zone;

(2) isolating (III) an antibody to an EPF, comprising injecting a biological fluid comprising EPF of the animal to another animal which is capable of producing antibody to the biological fluid, isolating antibodies and removing non-early EPF antibodies;

(3) a liquid sampling tube, comprising a base portion having an inlet for allowing a liquid sample to enter into the tube, a body portion having at least one opening and a top portion for enclosing the tube; and

(4) a **bovine** pregnancy testing kit (IV), comprising a **bovine** pregnancy test device and a liquid sampling tube.

USE - (I) or (II) is useful for determining pregnancy of an animal, especially a **cow** which is pregnant for less than 100 days, especially from 20-40 days, by obtaining a liquid biological sample such as urine, saliva, milk, perspiration (or their combinations), preferably serum and testing for the presence of EPF in the sample (claimed).

ADVANTAGE - The **pregnancy** detection method facilitates **early** detection of the **pregnancy** as **early** as 30-48 hours after insemination.

Dwg.0/6

L78 ANSWER 48 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1989-292498 [40] WPIDS

DOC. NO. NON-CPI: N1989-223124

DOC. NO. CPI: C1989-129639

TITLE: New mammalian **serum** protein indicative of **pregnancy** - allowing **early** diagnosis, esp. in **ruminants**, and identification of embryo death.

DERWENT CLASS: A89 B04 C03 J04 S03 S05

INVENTOR(S): CAMOUS, S; MARTAL, J

PATENT ASSIGNEE(S): (INRG) INRA INST NAT RECH AGRONOMIQUE

COUNTRY COUNT: 17

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 8908668	A	19890921	(198940)*	FR	27
RW: AT BE CH DE FR GB IT LU NL SE					
W: AU DK JP US					
FR 2628743	A	19890922	(198945)		
PT 90043	A	19891110	(198950)		
AU 8932959	A	19891005	(199001)		

EP 406281 A 19910109 (199102)
 R: AT BE CH DE FR GB IT LI LU NL SE
 DK 9002232 A 19900918 (199103)
 ES 2017811 A 19910301 (199115)
 JP 03504236 W 19910919 (199144)
 EP 406281 B1 19920722 (199230) FR 16
 R: AT BE CH DE FR GB IT LI LU NL SE
 DE 68902233 E 19920827 (199236)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8908668	A	WO 1989-FR115	19890317
FR 2628743	A	FR 1988-3590	19880318
EP 406281	A	EP 1989-903756	19890317
ES 2017811	A	ES 1989-978	19890317
JP 03504236	W	JP 1989-503451	19890317
EP 406281	B1	EP 1989-903756	19890317
		WO 1989-FR115	19890317
DE 68902233	E	DE 1989-602233	19890317
		EP 1989-903756	19890317
		WO 1989-FR115	19890317

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 406281	B1 Based on	WO 8908668
DE 68902233	E Based on	EP 406281
	Based on	WO 8908668

PRIORITY APPLN. INFO: FR 1988-3590 19880318

AB WO 8908668 A UPAB: 19930923

New protein, designate PSP (pregnancy serum protein) 60 and specific for pregnancy in mammals, has an N-terminal sequence of formula X-Gly-Ser-X -Leu-Thr-Thr-His -Pro-Leu-Arg-Asn-Ile -Lys-Asp-Leu-Val -Tyr-Met-Gly-X -Ile-Thr-Ile-Gly -Thr-Pro-Pro-Gln -Glu-Phe-Gln-Val-Val-Phe-Asp -Thr-Ala-Ser-X-(X is probably Asn). PSP60 has mol wt about 60.000 (polyacrylamide electrophoresis under denaturing conditions) and isoelectric point about 5.5.

USE - Detection of PSP60 in the blood (esp of **ruminants**) provides **early** detection of **pregnancy**, while a decrease in its concn is indicative of death of the embryo. It is detected by immunoassay with specific mono- or polyclonal antibodies.
 0/6

L78 ANSWER 49 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1986-264940 [40] WPIDS
 DOC. NO. NON-CPI: N1986-198048
 DOC. NO. CPI: C1986-114696
 TITLE: Cells producing **early pregnancy**
 factor - used for producing **monoclonal**
 antibodies and detecting pregnancy.
 DERWENT CLASS: B04 C03 D16 S03
 INVENTOR(S): CAVANAGH, A C; ROLFE, B E
 PATENT ASSIGNEE(S): (MORT-I) MORTON H; (UYQU) UNIV QUEENSLAND
 COUNTRY COUNT: 14
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
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 WO 8605498 A 19860925 (198640)* EN 20
 RW: AT BE CH DE FR GB IT LU NL SE
 W: AU GB JP US
 AU 8655897 A 19861013 (198651)
 JP 62502304 W 19870910 (198742)
 GB 2192634 A 19880120 (198803)
 EP 262119 A 19880406 (198814) EN
 R: AT BE CH DE FR IT LI NL SE
 GB 2192634 B 19900321 (199012)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8605498	A	WO 1986-AU60	19860312
JP 62502304	W	JP 1986-501847	19860312
GB 2192634	A	GB 1986-20636	19860312
EP 262119	A	EP 1986-901744	19860312

PRIORITY APPLN. INFO: AU 1985-2402 19850912; AU 1985-9664
 19850312; AU 1985-9750 19850315; AU
 1986-55897 19850320

AB WO 8605498 A UPAB: 19930922
 Method for producing **early pregnancy** factor (EPF) from
 any mammalian cell source comprises growing a selected cell which produces
 EPF in a culture medium to produce a supernatant medium contg. EPF and
 other prods. and harvesting the supernatant medium to obtain the EPF. The
 cells may be choriocarcinoma cells, human myeloma cells or human
 lymphoblastic cells. The purified EPF may be used to produce monoclonal
 antibodies.

USE - The antibodies can be used to detect EPF in human serum or
 urine for pregnancy diagnosis, e.g. in a home pregnancy testing kit or for
 detecting pregnancy in the horse and **cattle** industries and in
 the preservation of endangered species.

0/0

L78 ANSWER 50 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1986-042108 [06] WPIDS
 DOC. NO. NON-CPI: N1986-030808
 DOC. NO. CPI: C1986-017913
 TITLE: New isolated **bovine** pregnancy antigen and
monoclonal antibody to it - useful in detection
 and supervision of **bovine pregnancy**
 at **early** stage.
 DERWENT CLASS: B04 C03 D16 S03
 INVENTOR(S): BOSTWICK, E; HUNTER, A
 PATENT ASSIGNEE(S): (MINU) MINNESOTA UNIVERSITY
 COUNTRY COUNT: 11
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 8600623	A	19860130 (198606)*	EN	31	
RW: AT CH DE FR GB IT NL SE					
W: BR					
EP 188551	A	19860730 (198631)	EN		
R: AT CH DE FR GB IT LI NL SE					
BR 8506817	A	19861125 (198702)			
US 4755460	A	19880705 (198829)			

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8600623	A	WO 1985-US1288	19850708
EP 188551	A	EP 1985-903612	19850708
US 4755460	A	US 1984-628571	19840706

PRIORITY APPLN. INFO: US 1984-628571 19840706

AB WO 8600623 A UPAB: 19930922

(1) Isolated pure **bovine** pregnancy antigen for detecting and determnng. pregnancy in **cattle** consists of a glycoprotein (I) obtd from a pregnant **bovine** animal is new.

(I) binds adenine dinucleotide; it has immunoreactive portions of molecular wt. 158000-263000; it contains N-acetylglucosamine, galactose and L-fucose and D-mannose and/or D-glucose; it has an isoelectric point of 4.5-5.5; and it gives a blue stain with Coomassie blue.

(I) produces an antibody to which **bovine** luteinising hormone, haemoglobin, albumin, IgG, fibrinogen fetuin and alpha-fetoprotein are not cross-reactive. (2) Monoclonal antibody produced by a hybridoma formed by fusing cells from a mouse myeloma line and spleen cells from a mouse previously immunised with (I), and with which the antibody reacts, is new. The hybridoma is esp. ATCC HB 8846.

USE/ADVANTAGE - The antigen and/or antibody are used for the detection and supervision of **bovine pregnancy** at an **early** stage. Blood, urine, milk or tissue extract from the **bovine** is tested for the antigen by contact with antiserum to it.
0/2

L78 ANSWER 51 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1986-252581 [39] WPIDS

DOC. NO. NON-CPI: N1986-188800

DOC. NO. CPI: C1986-108895

TITLE: **Early pregnancy** test for **farm** animals - pref. **cattle**, pigs and sheep using heterologous antiserum against **early pregnancy serum**, absorbed with non-pregnant serum.

DERWENT CLASS: B04 C03 S03

INVENTOR(S): KLIMA, F; PITRE, C; TIEMANN, U

PATENT ASSIGNEE(S): (DEAK) AKAD WISSENSCHAFTEN DDR

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DD 236177	A	19860528	(198639)*		3

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DD 236177	A	DD 1985-275075	19850411

PRIORITY APPLN. INFO: DD 1985-275075 19850411

AB DD 236177 A UPAB: 19930922

In an **early pregnancy** test for agricultural animals,
(a) a heterologous antiserum against **early pregnancy**

serum of the species to be tested is prepared, and (b) the antiserum is absorbed with non-pregnant serum of the same species and subsequently used in a crossed immunoelectrophoresis or other serological in vitro detection method.

- Systematic **early** detection of **pregnancy** in farm animals (especially **cattle**, pigs and sheep), for monitoring of fertility and early recognition of sterility problems. Simple, rapid and cheap test giving sure diagnosis of pregnancy even in the pre-implantive phase.

0/0

L78 ANSWER 52 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1984-242835 [39] WPIDS
 DOC. NO. NON-CPI: N1984-181744
 DOC. NO. CPI: C1984-102640
 TITLE: **Early** diagnosis of **pregnancy** in **cattle** - involves using known gravo-hormone prepn. obtd. from **serum** of pregnant mares.
 DERWENT CLASS: B04 C03 P31
 INVENTOR(S): BOGDANOV, M P
 PATENT ASSIGNEE(S): (SHAT-I) SHATALOV P I
 COUNTRY COUNT: 1
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
SU 1072856	A	19840215	(198439)*		3

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
SU 1072856	A	SU 1975-2141946	19750609

PRIORITY APPLN. INFO: SU 1975-2141946 19750609

AB SU 1072856 A UPAB: 19930925

The **cattle** are injected subcutaneously with 2000-3000 units (mouse) units (800-1200 international units) on the 16th or 32nd day after insemination. 60-80 days after insemination rectal examination shows no hormonal stimulation in pregnant **cattle**. Non-pregnant **cattle** show positive stimulation.

USE/ADVANTAGE - More efficient **early** diagnosis of **pregnancy** esp. in longhorned **cattle**.

Typically, injections with Gravohomone preparate do not cause abortion and give high effectivity of **early** diagnosis of **pregnancy**. Bul.5/7.2.84.

0/0

L78 ANSWER 53 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1980-51100C [29] WPIDS
 TITLE: Monitoring pregnancy in dairy animals - by determining oestrogen conjugates in **milk**.
 DERWENT CLASS: B04 C03 P14 S03 X25
 PATENT ASSIGNEE(S): (HEAP-I) HEAP R B; (NATR) NAT RES DEV CORP
 COUNTRY COUNT: 5
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
NL 7909362	A	19800701	(198029)*		

GB 2040043 A 19800820 (198034)
 FR 2445107 A 19800829 (198042)
 US 4294922 A 19811013 (198144)
 CA 1131112 A 19820907 (198243)
 GB 2040043 B 19830316 (198311)

PRIORITY APPLN. INFO: GB 1978-50234 19781229; GB 1979-43682
 19791219

AB NL 7909362 A UPAB: 19930902
 Method of monitoring pregnancy in milk-producing livestock (esp. dairy **cattle**) comprises determining the concn. of estrogen conjugates (I) in a sample of (or derived from) the milk of the animal, and comparing the result with the av. concn. of (I) in milk from non-pregnant animals of the same species.

The test is based on the fact that the concn. of (I) in milk from pregnant animals is significantly higher than in milk from non-pregnant animals. It can be performed on a routine basis and provides an **early** indication of **pregnancy** (within 15-20 days of insemination); it also provides a measure of the health of the foetus in the later stages of pregnancy.

L78 ANSWER 54 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1976-42331X [23] WPIDS
 TITLE: Anti-embryo **serum** prod by immunizing hosts with embryonic matl - useful for diagnosis of pregnancy in mammals.
 DERWENT CLASS: B04 C03 P31 S03 S05
 PATENT ASSIGNEE(S): (AUST) AUSTRALIA DEPT AGRICULTUR; (VICT-N) STATE OF VICTORIA; (UYME) UNIV MELBOURNE
 COUNTRY COUNT: 6
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 2551431	A	19760526	(197623)*		
FR 2291497	A	19760716	(197638)		
JP 51091323	A	19760810	(197639)		
BR 7507642	A	19760831	(197644)		
ZA 7507032	A	19760916	(197648)		
GB 1492689	A	19771123	(197747)		

PRIORITY APPLN. INFO: AU 1974-9644 19741118; AU 1975-2695
 19750808

AB DE 2551431 A UPAB: 19930901
 New anti-embryo serum is produced by immunizing ≥ 1 animals with a homogenate of embryo or selected embryo parts, embryo extract, purified embryo fractions or the blood of pregnant animals, unimportant antibodies being removed by selective adsorption of tissue homogenates other than embryos, uteri, ovaries and the blood of pregnant animals. Procedure for the diagnosis of pregnancy in animals involves the use of antiserum thus produced in the testing of mammalian blood using methods which permit the detection of antigens, pref. agglutination agglutination inhibition, precipitation and/or radioimmunological methods. Used in **early** detection of **pregnancy** in animals such as sheep, **cattle** horses, pigs, dogs and goats as well as in humans. Unlike pregnancy tests involving the measurement of HCG, the new method is highly specific and does not give false positive results in the presence of such non-pregnancy

conditions as hydatiform moles, chorioadenoma or choriocarcinoma.

L78 ANSWER 55 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1967-07565H [00] WPIDS
 TITLE: **Early** detection of **pregnancy** in
 domestic animals.
 DERWENT CLASS: C00
 PATENT ASSIGNEE(S): (SYNT) SYNTEX CORP
 COUNTRY COUNT: 1
 PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
DE 1492157	B	(196800)*		

PRIORITY APPLN. INFO: DE 1962-S302187 19621005

AB DE 1492157 B UPAB: 19930831
 Compn. for **early** detection of **pregnancy** in domestic
 animals,
 contng. androgens and estrogens in an amount adapted to the
 animal species.
 Early detection of **pregnancy** in such
 non-menstruating
 domestic animals as horses, **cattle** and pigs in which pregnancy
 is
 otherwise difficult to detect in the early stages.

L78 ANSWER 56 OF 56 WPIDS (C) 2003 THOMSON DERWENT
 ACCESSION NUMBER: 1966-39723F [00] WPIDS
 TITLE: **Early** detection of **pregnancy** in
 domestic animals.
 DERWENT CLASS: B00
 PATENT ASSIGNEE(S): (SYNT) SYNTEX CORP
 COUNTRY COUNT: 1
 PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
DE 1492157	A	(196800)*		

PRIORITY APPLN. INFO: DE 1962-S302187 19621005

AB DE 1492157 B UPAB: 19930831
 Compn. for **early** detection of **pregnancy** in domestic
 animals,
 contng. androgens and estrogens in an amount adapted to the
 animal species.
 Early detection of **pregnancy** in such
 non-menstruating
 domestic animals as horses, **cattle** and pigs in which pregnancy
 is
 otherwise difficult to detect in the early stages.
 The pref. route of administration is by i.m. injection.
 Between the 12th and 17th days after mating (optimally on the
 15th or 16th day), the female animal is injected with an androgen
 - estrogen mixture in an experimentally determined
 species-specific dosage. The timing of the injection is less
 critical if long-acting steroid esters are used. If the animal

is not pregnant, powerful manifestations of estrus appear between the 20th and 24th day. If estrus does not appear, this is taken as an indication that the animal is pregnant. This diagnostic method has no effect on the fertility of the ova of non-pregnant animals and no effect on embryonic development in pregnant animals.

=> file home

FILE 'HOME' ENTERED AT 18:24:54 ON 02 APR 2003

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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:15:20 ; Search time 75 Seconds
(without alignments)
673.360 Million cell updates/sec

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Perfect score: 2008

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Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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3: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1982.DAT.*
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5: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1984.DAT.*
6: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1985.DAT.*
7: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1986.DAT.*
8: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1987.DAT.*
9: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1988.DAT.*
10: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1989.DAT.*
11: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1990.DAT.*
12: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1991.DAT.*
13: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1992.DAT.*
14: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1993.DAT.*
15: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1994.DAT.*
16: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1995.DAT.*
17: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1996.DAT.*
18: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1997.DAT.*
19: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.*
20: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.*
21: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.*
22: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*
23: /SIDS2/gcgdata/geneseq/geneseq-emb1/AA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	2008	100.0	379	20 AAY32040	Bovine pregnancy a
2	1983	98.8	379	20 AAY32042	Bovine pregnancy a
3	1571.5	78.3	380	20 AAY32044	Bovine pregnancy a
4	1559.5	77.7	380	20 AAY32050	Bovine pregnancy a
5	1553	77.3	381	20 AAY32051	Bovine pregnancy a
6	1532.5	76.3	380	20 AAY32045	Bovine pregnancy a
7	1529.5	76.2	380	20 AAY32048	Bovine pregnancy a
8	1526.5	76.0	380	20 AAY32043	Bovine pregnancy a
9	1526	76.0	381	20 AAY32046	Bovine pregnancy a
10	1511.5	75.3	380	20 AAY32049	Bovine pregnancy a

11	1508.5	75.1	380	20 AAY32047	Bovine pregnancy a
12	1505.5	75.0	380	20 AAY32041	Bovine pregnancy a
13	1484	73.9	379	20 AAY32038	Bovine pregnancy a
14	1449.5	72.2	377	20 AAY32037	Bovine pregnancy a
15	1388.5	69.1	380	20 AAY32036	Bovine pregnancy a
16	1368.5	68.2	392	20 AAY32057	Bovine pregnancy a
17	1298	64.6	341	20 AAY32039	Bovine pregnancy a
18	1157.5	57.6	375	20 AAY32055	Bovine pregnancy a
19	1151.5	57.3	391	20 AAY32056	Bovine pregnancy a
20	1148.5	57.2	376	20 AAY32035	Bovine pregnancy a
21	1105.5	55.1	376	20 AAY32054	Bovine pregnancy a
22	1086.5	54.1	380	20 AAY32053	Bovine pregnancy a
23	1044.5	52.0	388	20 AAY32058	Cat pregnancy asso
24	1001	49.9	387	20 AAY32052	Bovine pregnancy a
25	923.5	46.0	388	22 AAU27708	Human full-length
26	861	42.9	925	22 ARG15391	Novel human diagno
27	815	40.6	329	23 AAE23084	Mouse pepsinogen-f
28	805.5	40.1	339	22 ARG15392	Novel human diagno
29	803	40.0	326	22 AAB65589	Human pepsin. Hom
30	803	40.0	326	22 AAB61351	Pepsin protein. H
31	737.5	36.7	381	4 AAP30086	Sequence encoded b
32	734.5	36.6	381	5 AAP40559	Sequence of a poly
33	732.5	36.5	380	3 AAP20038	Pre-prorennin-A pr
34	732.5	36.5	381	5 AAP40218	Sequence of rennin
35	726.5	36.2	375	5 AAP40078	Sequence encoded b
36	726.5	36.2	390	22 AAU00536	Bovine chymosin po
37	726.5	36.2	458	10 AAP94376	BanHI/Sali insert
38	726.5	36.2	545	20 AAY33830	Oleusin-spacer-Met
39	725.5	36.1	365	10 AAP94144	Prochymosin. AAP
40	723.5	35.0	381	4 AAP30446	Sequence encoded b
41	721.5	35.9	365	11 AAR05080	Sequence of calf p
42	720.5	35.9	365	4 AAP30603	Sequence encoded b
43	716.5	35.7	379	4 AAP30013	Sequence encoded b
44	704.5	35.1	381	13 AAR20730	Prochymosin (proe
45	695.5	34.6	450	10 AAP94370	Sequence encoded b

ALIGNMENTS

RESULT 1
AAY32040
ID AAY32040 standard; Protein; 379 AA.
XX
AC AAY32040;
XX
DT 05-JAN-2000 (first entry)
XX
DE Bovine pregnancy associated glycoprotein boPAG9.
XX
KW PAG; boPAG9; pregnancy associated glycoprotein; cattle; bovine;
KW early pregnancy diagnosis.
XX
OS Bos taurus.
XX
PN WO9947934-A2.
XX
PD 23-SEP-1999.
XX
PF 19-MAR-1999; 99WO-US06038.
XX
PR 20-MAR-1998; 98US-0078783.
PR 28-OCT-1998; 98US-0106188.
XX
XX (UMOR) UNIV MISSOURI.
XX
PI Roberts RM, Green JA, Xie S;
XX
DR WPI: 1999-601132/51.
DR N-PSDB; AA220167.
XX
PT New bovine polypeptides useful for early diagnosis of pregnancy
XX

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PS Claim 66; Page 110-111; 136pp; English.
XX
CC This sequence represents bovine pregnancy associated glycoprotein
CC (PAG) boPAG9. PAGs are structurally related to pepsins, thought to
CC be restricted to ungulate mammals, and are specifically expressed
CC in the chorion or trophoctoderm of the placenta. PAGs (see
CC AAY32035-58) are highly diverse in sequence, with regions of
CC hypervariability largely confined to surface-exposed loops.
CC Selected PAGs (e.g. boPAG9) that are products of invasive binucleate
CC cells, expressed highly in early pregnancy at the time of
CC trophoblast invasion, and expressed weakly, if at all, in late
CC gestation, are useful in the early diagnosis of pregnancy. Identification
CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
CC rhinoceros, horse, cat, dog and human (all claimed).
XX
SQ Sequence 379 AA;
Query Match 100.0%; Score 2008; DB 20; Length 379;
Best Local Similarity 100.0%; Pred. No. 2.2e-202;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLTI 60
DB 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLTI 60
QY 61 HPLRNMNLVYVGNITIGTPPOEFQVVDGSSDLWVPFCTMPACSAFVWFRQLQSSTF 120
DB 61 HPLRNMNLVYVGNITIGTPPOEFQVVDGSSDLWVPFCTMPACSAFVWFRQLQSSTF 120
QY 121 OPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDQPFGLSVVEYGLGRNYDGVILGNYP 180
DB 121 OPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDQPFGLSVVEYGLGRNYDGVILGNYP 180
QY 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLIE 240
DB 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLIE 240
QY 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRILTRTPFDSKHVY 300
DB 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRILTRTPFDSKHVY 300
QY 301 SCFATKYLPSITFIINGIKYPMNTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
DB 301 SCFATKYLPSITFIINGIKYPMNTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
RESULT 2
AAY32042
ID AAY32042 standard; Protein; 379 AA.
XX
XX AAY32042;
XX
XX 05-JAN-2000 (first entry)
XX
DE Bovine pregnancy associated glycoprotein boPAG9v.
XX
KW PAG; boPAG9v; pregnancy associated glycoprotein; cattle; bovine;
XX early pregnancy diagnosis.
XX
OS Bos taurus.
XX
XX WO9947934-A2.
XX
XX 23-SEP-1999.
XX
XX 19-MAR-1999; 99WO-US06038.
XX
XX 20-MAR-1998; 98US-0078783.
XX
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PR 28-OCT-1998; 98US-0106188.
XX
XX (UMOR ) UNIV MISSOURI.
XX
XX Roberts RM, Green JA, Xie S;
XX
XX WPI; 1999-601132/51.
XX
XX N-PSDB; AA220169.
XX
XX New bovine polypeptides useful for early diagnosis of pregnancy -
XX
XX Claim 70; Page 122-123; 136pp; English.
XX
CC This sequence represents bovine pregnancy associated glycoprotein
CC (PAG) boPAG9v. PAGs are structurally related to pepsins, thought to
CC be restricted to ungulate mammals, and are specifically expressed
CC in the chorion or trophoctoderm of the placenta. PAGs (see
CC AAY32035-58) are highly diverse in sequence, with regions of
CC hypervariability largely confined to surface-exposed loops.
CC Selected PAGs (e.g. boPAG9v) that are produced in the early stages
CC of gestation, are useful in the early diagnosis of pregnancy.
CC Immunoassays for detecting such PAGs are disclosed. Identification
CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
CC rhinoceros, horse, cat, dog and human (all claimed).
XX
SQ Sequence 379 AA;
Query Match 98.8%; Score 1983; DB 20; Length 379;
Best Local Similarity 98.7%; Pred. No. 9.3e-200;
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;
QY 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLTI 60
DB 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLTI 60
QY 61 HPLRNMNLVYVGNITIGTPPOEFQVVDGSSDLWVPFCTMPACSAFVWFRQLQSSTF 120
DB 61 HPLRNMNLVYVGNITIGTPPOEFQVVDGSSDLWVPFCTMPACSAFVWFRQLQSSTF 120
QY 121 OPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDQPFGLSVVEYGLGRNYDGVILGNYP 180
DB 121 OPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDQPFGLSVVEYGLGRNYDGVILGNYP 180
QY 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLIE 240
DB 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLIE 240
QY 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRILTRTPFDSKHVY 300
DB 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRILTRTPFDSKHVY 300
QY 301 SCFATKYLPSITFIINGIKYPMNTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
DB 301 SCFATKYLPSITFIINGIKYPMNTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
QY 361 RYFSVFDGRGNDRIGLARAV 379
DB 361 RYFSVFDGRGNDRIGLARAV 379
RESULT 3
AAY32044
ID AAY32044 standard; Protein; 380 AA.
XX
XX AAY32044;
XX
XX 05-JAN-2000 (first entry)
XX
XX Bovine pregnancy associated glycoprotein boPAG16.
XX
KW PAG; boPAG16; pregnancy associated glycoprotein; cattle; bovine;
XX early pregnancy diagnosis.
XX
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[illegible]

CC AAY32035-58) are highly diverse in sequence, with regions of
 CC hypervariability largely confined to surface-exposed loops.
 CC Selected PAGs (e.g. boPAG15) that are produced in the early stages
 CC of gestation, are useful in the early diagnosis of pregnancy.
 CC Immunoassays for detecting such PAGs are disclosed. Identification
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
 CC rhinoceros, horse, cat, dog and human (all claimed).
 XX Sequence 380 AA;
 SQ
 Query Match 76.0%; Score 1526.5; DB 20; Length 380;
 Best Local Similarity 78.2%; Pred. No. 1.1e-151;
 Matches 297; Conservative 26; Mismatches 56; Indels 1; Gaps 1;
 QY 1 MKWIVLLGLVAFSECVKIPRQVKTMRKTLGKNNMLNFKLKEHPYRLSQISFRGSNLT 60
 DB 1 MKWIVLLGLVAFSECVKIPRQVKTMRKTLGKNNMLNFKLKEHPYRLSQISFRGSNLT 60
 QY 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPS-FCTMPACSAWVFRLOST 119
 DB 61 HPLRNIRDLFYGNITIGTPQEFQVVDGSSDLWVPSDFCTSPACSKHFRFRHLQST 120
 QY 120 FQPTNKTFITYGSGMKGFAYDVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 DB 121 FRLTNKTFIEYSGTMEGIYVAHDVTRIGDLVSTDPFGLSMTESGFEGIPDFGVGLNY 180
 QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 DB 181 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKDEQEGSVVMFGVDHGYKGLNWIPLI 240
 QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSIHIEGRLVNNIHLIRTRPFD SKHY 299
 DB 241 EAGDWIVHMDICSMRRKVIACSGGCEAVVDGVSIMKGPKTLDVNIQKLIGATLRGFKHY 300
 QY 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRSRETWILGDAPL 359
 DB 301 VCSAVIDPLPSITFIINGINRVPARAYILKDSRGCCYSSTFOTVSPSTETWILGDVFL 360
 QY 360 RRYFSVFDGRGNDRIGLARAV 379
 DB 361 RLYFSVFDGRGNDRIGLARAV 380
 RESULT 9
 AAY32046
 ID AAY32046 standard; Protein; 381 AA.
 AC AAY32046;
 XX
 XX 05-JAN-2000 (first entry)
 XX Bovine pregnancy associated glycoprotein boPAG18.
 XX PAG: boPAG18; pregnancy associated glycoprotein; cattle; bovine;
 XX early pregnancy diagnosis.
 XX Bos taurus.
 XX WO9947934-A2.
 XX 23-SEP-1999.
 XX 19-MAR-1999; 99WO-US06038.
 XX 20-MAR-1998; 98US-0078783.
 XX 28-OCT-1998; 98US-0106188.
 XX (UMOR) UNIV MISSOURI.
 XX Roberts RM, Green JA, Xie S;
 XX WPI; 1999-601132/51.
 XX N-PSDB; AAZ20173.

XX New bovine polypeptides useful for early diagnosis of pregnancy -
 XX Claim 78; Page 130-131; 136pp; English.
 XX This sequence represents bovine pregnancy associated glycoprotein
 CC (PAG) boPAG18. PAGs are structurally related to pepsins, thought to
 CC be restricted to ungulate mammals, and are specifically expressed
 CC in the chorion or trophoctoderm of the placenta. PAGs (see
 CC AAY32035-58) are highly diverse in sequence, with regions of
 CC hypervariability largely confined to surface-exposed loops.
 CC Selected PAGs (e.g. boPAG18) that are produced in the early stages
 CC of gestation, are useful in the early diagnosis of pregnancy.
 CC Immunoassays for detecting such PAGs are disclosed. Identification
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
 CC rhinoceros, horse, cat, dog and human (all claimed).
 XX Sequence 381 AA;
 SQ
 Query Match 76.0%; Score 1526; DB 20; Length 381;
 Best Local Similarity 76.9%; Pred. No. 1.2e-151;
 Matches 293; Conservative 30; Mismatches 56; Indels 2; Gaps 2;
 QY 1 MKWIVLLGLVAFSECVKIPRQVKTMRKTLGKNNMLNFKLKEHPYRLSQISFRGSNLT 60
 DB 1 MKWIVLLGLVAFSECVKIPRQVKTMRKTLGKNNMLNFKLKEHPYRLSQISFRGSNLT 60
 QY 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPS-FCTMPACSAWVFRLOST 119
 DB 61 HPLRNIRDLFYGNITIGTPQEFQVVDGSSDLWVPSFCTSTHVMFRHFSST 120
 QY 120 FQPTNKTFITYGSGMKGFAYDVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 DB 121 FRETKTFTSYNGSGMKGVVVDVTRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 180
 QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 DB 181 PKLSFSGAIPFDNLKNOGAISEPVFAFYLSKDEQEGSVVMFGVDHGYKGLNWIPLI 240
 QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSIHIEGRLVNNIHLIRTRPFD SKHY 299
 DB 241 QAGDWSVHMDISMKRKRVIACSGGCEAVVDGTSIEGPRRLVNNIQLIRAMPGRSEY 300
 QY 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRSRETWILGDAP 358
 DB 301 VCSAVNTLPPITFTIKGINYPVPAQAYILKDSRGHCYTTFKEDRLSPSTETWILGDV 360
 QY 359 LRRYFSVFDGRGNDRIGLARAV 379
 DB 361 LRRYFSVFDGRGNDRIGLARAV 381
 RESULT 10
 AAY32049
 ID AAY32049 standard; Protein; 380 AA.
 XX AAY32049;
 XX AC
 XX 05-JAN-2000 (first entry)
 XX Bovine pregnancy associated glycoprotein boPAG21.
 XX PAG: boPAG21; pregnancy associated glycoprotein; cattle; bovine;
 XX early pregnancy diagnosis.
 XX Bos taurus.
 XX WO9947934-A2.
 XX 23-SEP-1999.
 XX 19-MAR-1999; 99WO-US06038.
 XX

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PR 20-MAR-1998; 98US-0078783.
PR 28-OCT-1998; 98US-0106188.
XX
XX PA (UMOR ) UNIV MISSOURI.
XX
XX PI Roberts RM, Green JA, Xie S;
XX
XX WPI: 1999-601132/51.
XX DR N-PSDB; AA220176.
XX
XX PT New bovine polypeptides useful for early diagnosis of pregnancy -
XX
XX PS Claim 84; Page 135-136; 136pp; English.
XX
XX CC This sequence represents bovine pregnancy associated glycoprotein
XX (PAG) boPAG21. PAGs are structurally related to pepsins, thought
XX to be restricted to ungulate mammals, and are specifically expressed
XX in the chorion or trophoctoderm of the placenta. PAGs (see
XX CC AAY32035-58) are highly diverse in sequence, with regions of
XX CC hypervariability largely confined to surface-exposed loops.
XX CC Selected PAGs (e.g. boPAG21) that are produced in the early stages
XX of gestation, are useful in the early diagnosis of pregnancy.
XX CC Immunossays for detecting such PAGs are disclosed. Identification
XX of PAGs allows detection of pregnancy in cattle, goat, sheep,
XX CC rhinoceros, horse, cat, dog and human (all claimed).
XX
XX SQ Sequence 380 AA;
Query Match 75.3%; Score 1511.5; DB 20; Length 380;
Best Local Similarity 76.6%; Pred. No. 4e-150;
Matches 291; Conservative 30; Mismatches 58; Indels 1; Gaps 1;
QY 1 MKWIVLLGLVAFSECIKPIPLRVKTMKTLGSKNMLNFKLKEHPYRLSQISFRGSNLT 60
Db 1 MKWVLLGLVAFSECIKPIPLRVKTMKTLGSKNMLNFKLKEHGNRLSKISFRGSNLT 60
QY 61 HPLRNTMNLVYGNITIGTPPQEFQVVDGSSDLWVPS-FCTMPACAPVWFRLQSST 119
Db 61 LPLRNIEDLMVYGNITIGTPPQEFQVVDGSSDFWPSDFCTSPDCITHVRFHQSSST 120
QY 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNYDGVGLNY 179
Db 121 FRPNKTFSTITYGSGRKGVVHDTVIRIGDLVSTDPQFGLSVSEYGFDRAYDGLGLNY 180
QY 180 PNISFSGAIPFDLKNQGAISEPFAFYLSKNQEGSVVMFGVDHYKQELNWIPLI 239
Db 181 PDESEFAIPFDLKNQGAISEPFAFYLSKKKREGSVVMFGVDHYKQELNWIPLI 240
QY 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTRPFDK 299
Db 241 EEGDWSVRMDGISMKTKVACSDGCEAVVDGTSLIKGPRKLVNRIQKLIGATPRGSK 300
QY 300 VSCFATKYLPSITFLINGIKYPMTPARAYIFKDSRGRCYSAFKENTVRTSRETWILG 359
Db 301 VYCSAVNALPSIITFLINGINYPVARAYILKDSRGRCYTAFKKORFSSSTETWILG 360
QY 360 RRYFSVDRGNDRIGLARAV 379
Db 361 RRYFSVDRGNDRIGLARAV 380
RESULT 11
AAY32047
ID AAY32047 standard; Protein; 380 AA.
XX
XX AC AAY32047;
XX
XX DT 05-JAN-2000 (first entry)
XX
XX DE Bovine pregnancy associated glycoprotein boPAG19.
XX
XX KW PAG; boPAG19; pregnancy associated glycoprotein; cattle; bovine;
XX early pregnancy diagnosis.

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XX Bos taurus.
XX OS WO9947934-A2.
XX PN
XX PD 23-SEP-1999.
XX
XX PF 19-MAR-1999; 99WO-US06038.
XX
XX PR 20-MAR-1998; 98US-0078783.
XX PR 28-OCT-1998; 98US-0106188.
XX
XX PA (UMOR ) UNIV MISSOURI.
XX
XX PI Roberts RM, Green JA, Xie S;
XX
XX WPI: 1999-601132/51.
XX DR N-PSDB; AA220174.
XX
XX PT New bovine polypeptides useful for early diagnosis of pregnancy -
XX
XX PS Claim 80; Page 131-133; 136pp; English.
XX
XX CC This sequence represents bovine pregnancy associated glycoprotein
XX (PAG) boPAG19. PAGs are structurally related to pepsins, thought
XX to be restricted to ungulate mammals, and are specifically expressed
XX in the chorion or trophoctoderm of the placenta. PAGs (see
XX CC AAY32035-58) are highly diverse in sequence, with regions of
XX CC hypervariability largely confined to surface-exposed loops.
XX CC Selected PAGs (e.g. boPAG19) that are produced in the early stages
XX of gestation, are useful in the early diagnosis of pregnancy.
XX CC Immunossays for detecting such PAGs are disclosed. Identification
XX of PAGs allows detection of pregnancy in cattle, goat, sheep,
XX CC rhinoceros, horse, cat, dog and human (all claimed).
XX
XX SQ Sequence 380 AA;
Query Match 75.1%; Score 1508.5; DB 20; Length 380;
Best Local Similarity 75.8%; Pred. No. 8.2e-150;
Matches 288; Conservative 33; Mismatches 58; Indels 1; Gaps 1;
QY 1 MKWIVLLGLVAFSECIKPIPLRVKTMKTLGSKNMLNFKLKEHPYRLSQISFRGSNLT 60
Db 1 MKWVLLGLVAFSECIKPIPLRVKTMKALSGKNMLNFKLKEHAYRLSQISFRGSNLT 60
QY 61 HPLRNTMNLVYGNITIGTPPQEFQVVDGSSDLWVPS-FCTMPACAPVWFRLQSST 119
Db 61 HPLRNTKDLVLANITIGTPPQEFQVFLDTGSSDLWVPSDFCTSPGCSKHVFRHQSST 120
QY 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNYDGVGLNY 179
Db 121 FRLTNKTFTITYGSGRIKGVVHDTVIRIGDLVSTDPQFGLSMAEYGLEHLPFDGILG 180
QY 180 PNISFSGAIPFDLKNQGAISEPFAFYLSKNQEGSVVMFGVDHYKQELNWIPLI 239
Db 181 PNVSSSGAIPFDLKNQGAISEPFAFYLSKDKQEGSVVMFGVDHYRGRKLNWVPLI 240
QY 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTRPFDK 299
Db 241 QAGNWTIHMDSISIERKVIACSGGCVAFDIGTAFIEGPKPLVDNMOKLIRAKPWRSK 300
QY 300 VSCFATKYLPSITFLINGIKYPMTPARAYIFKDSRGRCYSAFKENTVRTSRETWILG 359
Db 301 VSCSAVNTLPSITFTINGINYPVGRAYILKDSRRRCYSTFKKEIPUSPTTEFWMLGD 360
QY 360 RRYFSVDRGNDRIGLARAV 379
Db 361 RLYFSVDRGNDRIGLARAV 380
RESULT 12
AAY32041
ID AAY32041 standard; Protein; 380 AA.

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XX AC AAY32041;
XX DT 05-JAN-2000 (first entry)
XX DE Bovine pregnancy associated glycoprotein boPAG7v.
XX KW PAG; boPAG7v; pregnancy associated glycoprotein; cattle; bovine;
XX KW early pregnancy diagnosis.
XX OS Bos taurus.
XX XX WO9947934-A2.
XX PN 23-SEP-1999.
XX PD 19-MAR-1999; 99WO-US06038.
XX PF 20-MAR-1998; 98US-0078783.
XX PR 28-OCT-1998; 98US-0106188.
XX XX (UMOR) UNIV MISSOURI.
XX PA Roberts RM, Green JA, Xie S;
XX PI WPI; 1999-601132/51.
XX DR N-PSDB; AAZ20168.
XX PT New bovine polypeptides useful for early diagnosis of pregnancy -
XX XX Claim 68; Page 120-122; 136pp; English.
XX PS This sequence represents bovine pregnancy associated glycoprotein
CC (PAG) boPAG7v. PAGs are structurally related to pepsins, thought to
CC be restricted to ungulate mammals, and are specifically expressed
CC in the chorion or trophoctoderm of the placenta. PAGs (see
CC AAY32035-58) are highly diverse in sequence, with regions of
CC hypervariability largely confined to surface-exposed loops.
CC Selected PAGs (e.g. boPAG7v) that are produced in the early stages
CC of gestation, are useful in the early diagnosis of pregnancy.
CC Immunoassays for detecting such PAGs are disclosed. Identification
CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
CC rhinoceros, horse, cat, dog and human (all claimed).
XX XX Sequence 380 AA;
Query Match 75.0%; Score 1505.5; DB 20; Length 380;
Best Local Similarity 74.5%; Pred. No. 1.7e-149;
Matches 283; Conservative 39; Mismatches 57; Indels 1; Gaps 1;
Qy 1 MKWIVLLGLVAFSECVIKIPLRQVTKMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWLVGLVAFSECVIKIPLRVTKMRKTLGKKNMLNFKLEDYRLSQISFRGSNLT 60
Qy 61 HPLRNMNLVYVGNITIGTPPOEQVVFDTGSSDLWVPSF-CTMPACSAVPVFRQLQSST 119
Db 61 HPLNRIRDFYVGNITIGTPPOEQVIFDTGSSDLWVPSIDCNSTCAVHFRHLQSST 120
Qy 120 FQPTNKTFTTYTIGSSGMKGLAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDVGLGLNY 179
Db 121 FRPTNKTFTTYTIGSSGMKGLAYDVRIGDLVSTDPQFGLSVVEYGFHAKRFDGILGLNY 180
Qy 180 PNISFGAIPFDNLKNOGAISEPFAFVLSKNQEGSVVMGGVDHGYKELNWIPLI 239
Db 181 WNLWSKAMPFDKLNKEGAISEPFAFVLSKDKREGSVVMGGVDHRYKELKMWPLI 240
Qy 240 EAGERVHMDRISMRKRTVIACSDGCEALVHTGTSIHGPGRLVNNHRLIRTPFDSKY 299
Db 241 QAVDMSVHVRTMTNREVIACTEGCAALVDTCSSNIQPRRLIDNIQRIIGATPRCSKY 300
Qy 300 VSCFATKPLPSTFTINGIKYPMPTARAYIFKDSGRCSYSAFKENTVTRSTREWIIGDAFL 359
Db 301 VSCSAVNILPSTIFTINGVNPVPPRAYILKDSRGHCTTFEKRVRRTSTESWVLGEVL 360

QY 360 RRYFSVFDRCNDRIGLARAV 379
Db 361 RLYFSVFDRCNDRIGLARAV 380
RESULT 13
AAY32038
ID AAY32038 standard; Protein; 379 AA.
XX AC AAY32038;
XX DT 05-JAN-2000 (first entry)
XX DE Bovine pregnancy associated glycoprotein boPAG6.
XX KW PAG; boPAG6; pregnancy associated glycoprotein; cattle; bovine;
XX KW early pregnancy diagnosis.
XX OS Bos taurus.
XX PN WO9947934-A2.
XX PD 23-SEP-1999.
XX PF 19-MAR-1999; 99WO-US06038.
XX PR 20-MAR-1998; 98US-0078783.
XX PR 28-OCT-1998; 98US-0106188.
XX XX (UMOR) UNIV MISSOURI.
XX PA Roberts RM, Green JA, Xie S;
XX PI WPI; 1999-601132/51.
XX DR N-PSDB; AAZ20165.
XX PT New bovine polypeptides useful for early diagnosis of pregnancy -
XX XX Claim 62; Page 106-107; 136pp; English.
XX PS This sequence represents bovine pregnancy associated glycoprotein
CC (PAG) boPAG6. PAGs are structurally related to pepsins, thought to
CC be restricted to ungulate mammals, and are specifically expressed
CC in the chorion or trophoctoderm of the placenta. PAGs (see
CC AAY32035-58) are highly diverse in sequence, with regions of
CC hypervariability largely confined to surface-exposed loops.
CC Selected PAGs (e.g. boPAG6) that are products of invasive binucleate
CC cells, expressed highly in early pregnancy at the time of
CC trophoblast invasion, and expressed weakly, if at all, in late
CC gestation, are useful in the early diagnosis of pregnancy.
CC Immunoassays for detecting such PAGs are disclosed. Identification
CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
CC rhinoceros, horse, cat, dog and human (all claimed).
XX XX Sequence 379 AA;
Query Match 73.9%; Score 1484; DB 20; Length 379;
Best Local Similarity 74.7%; Pred. No. 3.1e-147;
Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;
Qy 1 MKWIVLLGLVAFSECVIKIPLRQVTKMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWLVGLVAFSECVIKIPLRVTKMRKTLGKKNMLNFKLEDYRLSQISFRGSNLT- 59
Qy 61 HPLRNMNLVYVGNITIGTPPOEQVVFDTGSSDLWVPS-FCMPACSAVPVFRQLQSST 119
Db 60 HPLNRIRDFYVGNITIGTPPOEQVIFDTGSSDLWVPSIFCNSSCAAHVFRHQSST 119
Qy 120 FQPTNKTFTTYTIGSSGMKGLAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDVGLGLNY 179
Db 120 FRPTNKTFTTYTIGSSGMKGLAYDVRIGDLVSTDPQFGLSVVEYGFHAKRFDGILGLSY 179

QY 180 PNISFGAIPFDNLKNOGAISEPVFAFYLSKNKQGVSVVFGVGDHYYKGLNWIDPLI 239
 Db 180 PNKFTSGAIPFDNLKNOGAISEPVFAFYLSKNKQGVSVVFGVGDHYYKGLNWIDPLI 239
 QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSIHIEGPGRLVNNIHLIRTPDPDSKHY 299
 Db 240 QVGDWFHMDRISMKRTVIACSDGCKALVDTGTSIDVGPSTLVNNIWLIRARPLGPOIF 299
 QY 300 VSCFATKPLPSITFIINGIKYPMPTARAYIFKDSRGRCYSFAFKENTVRTSRETWILGDAFL 359
 Db 300 VSCSAVNTLPSIIFTINGINYLPARAYIHKDSRGRCYTAKEHFFSPFIETWLLGDVFL 359
 QY 360 RRYFSVDRGNDRIGLARAV 379
 Db 360 RRYFSVDRGNDRIGLARAV 379

RESULT 14
 AAY32037
 ID AAY32037 standard; Protein; 377 AA.
 XX
 AC AAY32037;
 XX
 DT 05-JAN-2000 (first entry)
 XX
 DE Bovine pregnancy associated glycoprotein boPAG5.
 XX
 KW PAG; boPAG5; pregnancy associated glycoprotein; cattle; bovine;
 KW early pregnancy diagnosis.
 XX
 OS Bos taurus.
 XX
 PN WO9947934-A2.
 XX
 PD 23-SEP-1999.
 XX
 PF 19-MAR-1999; 99WO-US06038.
 XX
 PR 20-MAR-1998; 98US-0078783.
 PR 28-OCT-1998; 98US-0106188.
 XX
 XX (UMOR) UNIV MISSOURI.
 XX
 PI Roberts RM, Green JA, Xie S;
 XX WPI; 1999-601132/51.
 DR N-PSDB; AAZ20164.
 XX
 PT New bovine polypeptides useful for early diagnosis of pregnancy -
 PS Claim 60; Page 105-106; 136pp; English.
 XX
 CC This sequence represents bovine pregnancy associated glycoprotein
 CC (PAG) boPAG5. PAGs are structurally related to pepsins, thought to
 CC be restricted to ungulate mammals, and are specifically expressed
 CC in the chorion or trophoctoderm of the placenta. PAGs (see
 CC AAY32035-58) are highly diverse in sequence, with regions of
 CC hypervariability largely confined to surface-exposed loops.
 CC Selected PAGs (e.g. boPAG5) that are products of invasive binucleate
 CC cells, expressed highly in early pregnancy at the time of
 CC trophoblast invasion, and expressed weakly, if at all, in late
 CC gestation, are useful in the early diagnosis of pregnancy.
 CC Immunoassays for detecting such PAGs are disclosed. Identification
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
 CC rhinoceros, horse, cat, dog and human (all claimed).
 XX
 SQ Sequence . 377 AA;
 Query Match 72.2%; Score 1449.5; DB 20; Length 377;
 Best Local Similarity 75.1%; Pred. No. 1.3e-143;
 Matches 284; Conservative 25; Mismatches 66; Indels 3; Gaps 2;

QY 1 MKWLVLLGLTSECVIKPLRVKTMKRTLSKNNLNFLEQAYRLSQISGRSNITI 60
 QY 61 HPLRINMNLVYVGNITIGTPPOEFQVVDGSSDLWVPS-FCTMPACSAVPWFRQSQST 119
 Db 61 HPLRINMDVYVGNITIGTPPOEFQVVDGSSDLWVPSVFCSSACSTHIREHLESST 120
 QY 120 FQPTNKTFTTYGSSGMKGLAYDVTVRIGDLVSTDDQFGLSVVEYGLEGRNYDGLVGLNY 179
 Db 121 SGLTKFTSITYGSGSTKGLAYDVTVRIGDLVSTDDQFGLSMEEHGFEDLPFGVILGLNY 180
 QY 180 PNISFGAIPFDNLKNOGAISEPVFAFYLSKNKQGVSVVFGVGDHYYKGLNWIDPLI 239
 Db 181 PDMSEFTTIPFDNLKNOGAISEPVFAFYLSKNKQGVSVVFGVGDHYYKGLNWIDPLI 238
 QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSIHIEGPGRLVNNIHLIRTPDPDSKHY 299
 Db 239 QAGWSLHMDRISMKRKVIACSGGCEAFYDTGTSILGPRRLVNNIQLIGATPQGSSEHY 298
 QY 300 VSCFATKPLPSITFIINGIKYPMPTARAYIFKDSRGRCYSFAFKENTVRTSRETWILGDAFL 359
 Db 299 ISCFAVISLPSIIFTINGINIPPARAYIHKDSRGHCYTFKENTVSTETWILGDVFL 358
 QY 360 RRYFSVDRGNDRIGLARAV 377
 Db 359 RLYFSVDRGNDRIGLAQ 376

RESULT 15
 AAY32036
 ID AAY32036 standard; Protein; 380 AA.
 XX
 AC AAY32036;
 XX
 DT 05-JAN-2000 (first entry)
 XX
 DE Bovine pregnancy associated glycoprotein boPAG4.
 XX
 KW PAG; boPAG4; pregnancy associated glycoprotein; cattle; bovine;
 KW early pregnancy diagnosis.
 XX
 OS Bos taurus.
 XX
 PN WO9947934-A2.
 XX
 PD 23-SEP-1999.
 XX
 PF 19-MAR-1999; 99WO-US06038.
 XX
 PR 20-MAR-1998; 98US-0078783.
 PR 28-OCT-1998; 98US-0106188.
 XX
 XX (UMOR) UNIV MISSOURI.
 XX
 PI Roberts RM, Green JA, Xie S;
 XX WPI; 1999-601132/51.
 DR
 XX New bovine polypeptides useful for early diagnosis of pregnancy -
 PT Claim 58; Page 103-105; 136pp; English.
 XX
 CC This sequence represents bovine pregnancy associated glycoprotein
 CC (PAG) boPAG4. PAGs are structurally related to pepsins, thought to
 CC be restricted to ungulate mammals, and are specifically expressed
 CC in the chorion or trophoctoderm of the placenta. PAGs (see
 CC AAY32035-58) are highly diverse in sequence, with regions of
 CC hypervariability largely confined to surface-exposed loops.
 CC Selected PAGs (e.g. boPAG4) that are products of invasive binucleate
 CC cells, expressed highly in early pregnancy at the time of
 CC trophoblast invasion, and expressed weakly, if at all, in late
 CC gestation, are useful in the early diagnosis of pregnancy.
 CC Immunoassays for detecting such PAGs are disclosed. Identification
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,
 CC rhinoceros, horse, cat, dog and human (all claimed).
 XX
 SQ Sequence . 377 AA;
 Query Match 72.2%; Score 1449.5; DB 20; Length 377;
 Best Local Similarity 75.1%; Pred. No. 1.3e-143;
 Matches 284; Conservative 25; Mismatches 66; Indels 3; Gaps 2;

QY 1 MKWLVLLGLTSECVIKPLRVKTMKRTLSKNNLNFLEQAYRLSQISGRSNITI 60

GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:16:54 ; Search time 22 Seconds
(without alignments)
1656.134 Million cell updates/sec

Title: US-09-273-164-32

Perfect score: 2008

Sequence: 1 MKWIVLLGLVAFSECIVKIP.....RRYFVSFDRGNDRIGLARAV 379

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR.73:*

1: piri:*

2: piri2:*

3: piri3:*

4: piri4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query %	Length	ID	Description
1	1559.5	77.7	380	2 B41545	pregnancy-specific
2	1404	69.9	383	2 A41545	pregnancy-specific
3	1375.5	68.5	380	2 T10284	pregnancy-specific
4	1148.5	57.2	376	2 I45856	aspartic proteinase
5	1053	52.4	387	2 I46617	pregnancy-associat
6	953	47.5	389	2 A38302	pepsin (EC 3.4.23.
7	938	46.7	389	2 I46616	pregnancy-associat
8	924.5	46.0	388	1 S19684	pepsin A (EC 3.4.2
9	923.5	46.0	388	1 PEHU	pepsin A (EC 3.4.2
10	920	45.8	387	2 J72445	pepsinogen A - com
11	918.5	45.7	388	2 A30142	pepsin A (EC 3.4.2
12	915.5	45.6	388	1 PEMQAJ	pepsin A (EC 3.4.2
13	915.5	45.6	388	2 B30142	pepsin A (EC 3.4.2
14	914.5	45.5	388	1 PEMQAR	pepsin A (EC 3.4.2
15	914	45.5	387	2 B38302	pepsin (EC 3.4.23.
16	914	45.5	387	2 E38302	pepsin (EC 3.4.23.
17	909	45.3	387	2 D38302	pepsin (EC 3.4.23.
18	906.5	45.1	388	1 S19682	pepsin A (EC 3.4.2
19	899	44.8	387	2 B38302	pepsin (EC 3.4.23.
20	886.5	44.1	386	1 PEPG	pepsin A (EC 3.4.2
21	856.5	42.7	384	2 JC7574	pepsinogen A - Afr
22	843	42.0	385	2 JC7575	pepsinogen A - bul
23	806.5	40.2	383	2 A41443	pepsin (EC 3.4.23.
24	774	38.5	334	2 JC4870	pepsin A (EC 3.4.2
25	772.5	38.5	395	2 A34401	cathepsin E (EC 3.
26	767.5	38.2	398	2 S66465	cathepsin E (EC 3.
27	762.5	38.0	381	2 JC7247	prochymosin - comm
28	753.5	37.5	382	1 PECH	pepsin A (EC 3.4.2
29	743.5	37.0	380	2 I47176	chymosin (EC 3.4.2

30	738.5	36.8	396	2 S36865	cathepsin E (EC 3.
31	737.5	36.7	381	1 CMBO	chymosin (EC 3.4.2
32	713.5	35.5	381	1 CMHB	chymosin (EC 3.4.2
33	701	34.9	391	2 A43356	cathepsin E (EC 3.
34	699.5	34.8	384	2 A39314	gastricsin (EC 3.4
35	696.5	34.7	388	2 JC7246	pepsinogen C - com
36	686.5	34.2	388	2 A29937	gastricsin (EC 3.4
37	681.5	33.9	392	1 A24608	gastricsin (EC 3.4
38	680	33.9	383	2 JC7573	pepsinogen C - Afr
39	677	33.7	365	2 S66466	cathepsin E (EC 3.
40	668.5	33.3	394	2 B43356	gastricsin (EC 3.4
41	667.5	33.2	377	1 PEMQJ	gastricsin (EC 3.4
42	659	32.8	389	2 JE0371	pepsin C (EC 3.4.2
43	648	32.3	398	2 I51185	cathepsin D (EC 3.
44	632.5	31.5	410	1 KHMSD	cathepsin D (EC 3.
45	621	30.9	407	1 KHRTD	cathepsin D (EC 3.

ALIGNMENTS

RESULT 1

B41545

pregnancy-specific antigen precursor - bovine

C:Species: Bos primigenius taurus (cattle)

C>Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 22-Jun-1999

C:Accession: B41545

R:Xie, S.; Low, B.G.; Nagel, R.J.; Kramer, K.K.; Anthony, R.V.; Zoli, A.P.; Beckers,
Proc. Natl. Acad. Sci. U.S.A. 88, 10247-10251, 1991

A:Title: Identification of the major pregnancy-specific antigens of cattle and sheep

A:Reference number: A41545; MUID:92052247; PMID:1946444

A:Accession: B41545

A:Status: preliminary; not compared with conceptual translation

A:Molecule type: mRNA

A:Residues: 1-380 <XIE>

A:Cross-references: GB:M73962; NID:gl63480; PIDN:AAB53145.1; PID:g971164

C:Superfamily: pepsin

Query Match 77.7%; Score 1559.5; DB 2; Length 380;
Best Local Similarity 78.2%; Pred. No. 1.6e-122; Indels 1; Gaps 1;
Matches 297; Conservative 28; Mismatches 54;

QY	1	MKWIVLLGLVAFSECIVKIP	LRQVKTMKRLTSGKNMLKFLKEHPYRLSQISFRGSNLT	60	
DB	1	MKWIVLLGLVAFSECIVKIP	LRRLKTMRVVSGKNMLNFKELHAYLSQISFRGSNLT	60	
QY	61	HLPRNIMNLVYVGNITIGTPPQ	EQVVFDTGSSDLWVPS-FCIMPACSA	PWFRLQSS	119
DB	61	HLPRNIMNLVYVGNITIGTPPQ	EQVVFDTGSSDLWVPS-FCIMPACSA	THVFRHLQSS	120
QY	120	FQPTNKTFTTYTSGSMKGLAY	DTVRIGDLVSTDQPFGLSVVEYGLEGRNDVGLN	179	
DB	121	FRLTNKTFTTYTSGSMKGLAY	DTVRIGDLVSTDQPFGLSVVEYGLEGRNDVGLN	180	
QY	180	PNISFSGAIPFDNLKNOGAISE	PEVFAFYLSKKNQEGSVYVFGVDHYKGBELNWIPL	239	
DB	181	PNISFSGAIPFDNLKNOGAISE	PEVFAFYLSKKNQEGSVYVFGVDHYKGBELNWIPL	240	
QY	240	EAGEVWHMDRISMKRTV	TACSDGCEALVHTGSHTEGGRNVNTHRLTRPFDSKHY	299	
DB	241	QAGDWSVHMDRISMKRTV	TACSDGCEALVHTGSHTEGGRNVNTHRLTRPFDSKHY	300	
QY	300	VSCFATKYLPSITFIINGIKY	PMWARAYIFKDSGRGCSAFKENTVRTSRETWILGDAL	359	
DB	301	VPCSEVNTLPSIVFTTINGIN	YPVGRAYILKDDGRGCTTFQENRVSSSTETWILGDVFL	360	
QY	360	RRYFVSFDRGNDRIGLARAV		379	
DB	361	RLYFSVDFDRGNDRIGLARAV		380	

RESULT 2

A41545

pregnancy-specific antigen 1 precursor - sheep

C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C>Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 19-Jan-2001

C:Accession: A41545

R:Xie, S.; Low, B.G.; Nagel, R.J.; Kramer, K.K.; Anthony, R.V.; Zoli, A.P.; Beckers, J.F. Proc. Natl. Acad. Sci. U.S.A. 88, 10247-10251, 1991

A:Title: Identification of the major pregnancy-specific antigens of cattle and sheep as A:Reference number: A41545; MUID:92052247; PMID:1946444

A:Accession: A41545

A:Status: preliminary; not compared with conceptual translation

A:Molecule type: mRNA

A:Residues: 1-383 <XIE>

A:Cross-references: GB:M73961

C:Superfamily: pepsin

Query Match 69.94; Score 1404; DB 2; Length 383;

Best Local Similarity 71.8%; Pred. No. 1.5e-109;

Matches 275; Conservative 35; Mismatches 69; Indels 4; Gaps 2;

QY 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60

DB 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRASNLTI 60

QY 61 HPLRNIMNLVYVGNITICTPPQEFQVVDGSSDLWVPSF-CTMPA---CSAPVWFRQLQ 116

DB 61 HPLRNIMNLVYVGNITICTPPQEFQVVDGSSDLVPSINCLSPTRKPCQDKFKKHQ 120

QY 117 SSTFQTNKTTFTTYGSGMKGFAYDVRIGDLVSTQDPFGLSVVEYEGLEGRNVDGLV 176

DB 121 SSTFRTNDTRFVYSGTMRGFAVDVRIGDLVSTQDPFGLIFLESWLDGIPFDGLIG 180

QY 177 LNYPNISFGAIPIDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHGYKGLNMI 236

DB 181 LNYPKISFGAIPIDNLKNEGAFSEPVFAFYLNKDKQEGSVVMFGVDHRYKGLNMI 240

QY 237 PLIEAGENVHMDRISMKRTVIACSGEALVHTGTSIEGRLVNNIHLIRTPFDS 296

DB 241 PLIHGWSIPLDRISMRRKVIACSGEALVGTGTLILGPRVTYVNIQKHIGATQQCF 300

QY 297 KHYVSCFATKYLPSITFIINGIKYPMATRAYIFKDSRGRCYSAFKENTVTRTRETWILGD 356

DB 301 EYFVSCSAVYALPSIVFTINGINYPVPAQAYLVKDSRGQCYSPFQVNRANPSAENWILGD 360

QY 357 AFLRRYFSVDFGRNDRIGLARAV 379

DB 361 VFLRRYFSVDFGRNDRIGLARAV 383

RESULT 3

Ti0264

pregnancy-specific antigen 7 precursor - sheep

C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C>Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 26-Aug-1999

C:Accession: Ti0264

R:Xie, S.; Green, J.; Valdez, K.; Roberts, R.M.

submitted to the EMBL Data Library, March 1997

A:Reference number: 217006

A:Accession: Ti0264

A:Status: preliminary; translated from GB/EMBL/DBDJ

A:Molecule type: mRNA

A:Residues: 1-380 <XIE>

A:Cross-references: EMBL:U94793; NID:g2055440; PID:g2055441

A:Experimental source: placenta

C:Superfamily: pepsin

Query Match 68.5%; Score 1375.5; DB 2; Length 380;

Best Local Similarity 69.2%; Pred. No. 3.7e-107;

Matches 263; Conservative 44; Mismatches 72; Indels 1; Gaps 1;

QY 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60

DB 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRDSNLTI 60

QY 61 HPLRNIMNLVYVGNITICTPPQEFQVVDGSSDLWVPSF-CTMPACSAVPWFRQLQSST 119

DB 61 LPLRNKMDIFVYVGNITICTPPQEFQVVDGSSDLWVPSIFWNSSTCTSLVRFKHRQSST 120

QY 120 FQPTNKTFTTYGSGMKGFAYDVRIGDLVSTQDPFGLSVVEYEGLEGRNVDGLVGLNY 179

DB 121 FRTNKTFTTYGAGTMKGVAHDVTRIGDLVSDIDQFGLSMAEYGFMDRFRFDGILGLNY 180

QY 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHGYKGLNMIPLI 239

DB 181 PQOSKTKWIFDKLSQSGAISEPVFAFYLSKDEQEGSVVMFGVDHGYKGLNMIPLI 240

QY 240 EAGEWRVHMDRISMKRTVIACSGEALVHTGTSIEGRLVNNIHLIRTRPFDKSHY 299

DB 241 KADDSIHVDRISSMRREVIAACSGCDALLDTGASFHGPGRLLDDIOKLLGSEORDFKHY 300

QY 300 VSCFATKYLPSITFIINGIKYPMATRAYIFKDSRGRCYSAFKENTVTRTRETWILGDALF 359

DB 301 ISCSAVNTLPSITFIINGINYPVPAQAYILKSGTGHCTAFRAKRVRTSYESWVLGDVFL 360

QY 360 RRYFSVDFGRNDRIGLARAV 379

DB 361 RLYFSVDFGRNDRIGLARAV 380

RESULT 4

I45856

aspartic proteinase - bovine

C:Species: Bos primigenius taurus (cattle)

C>Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 22-Jun-1999

C:Accession: I45856

R:Xie, S.; Low, B.G.; Nagel, R.J.; Beckers, J.F.; Roberts, R.M.

Biol. Reprod. 51, 1145-1153, 1994

A:Title: A novel glycoprotein of the aspartic proteinase gene family expressed in bo

A:Reference number: I45856; MUID:95195025; PMID:7534122

A:Accession: I45856

A:Status: preliminary; translated from GB/EMBL/DBDJ

A:Molecule type: mRNA

A:Residues: 1-376 <XIE>

A:Cross-references: GB:I06151; NID:gl62695; PIDN:AAA65822.1; PID:g797279

C:Superfamily: pepsin

Query Match 57.2%; Score 1148.5; DB 2; Length 376;

Best Local Similarity 59.5%; Pred. No. 3.4e-98;

Matches 226; Conservative 50; Mismatches 99; Indels 5; Gaps 3;

QY 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60

DB 1 MKWVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 57

QY 61 HPLRNIMNLVYVGNITICTPPQEFQVVDGSSDLWVPSF-CTMPACSAVPWFRQLQSST 119

DB 58 HPLRNILDTAYVGNITICTPPQEFQVVDGSSDLWVPSIFWNSSTCTSLVRFKHRQSST 117

QY 120 FQPTNKTFTTYGSGMKGFAYDVRIGDLVSTQDPFGLSVVEYEGLEGRNVDGLVGLNY 179

DB 118 FREVGPITITFYGSGITQGLGSDTVRIGNLVSPQSGLSLEBYGFDLFDGILGLAF 177

QY 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHGYKGLNMIPLI 239

DB 178 PAMGIEDTIPIDNLWSHGAFSEPVFAFYLTNKNPEGSVVMFGVDHRYKGLNMIPLI 237

QY 240 EAGEWRVHMDRISMKRTVIACSGEALVHTGTSIEGRLVNNIHLIRTRPFDKSHY 299

DB 238 QTSHWQISMNINISMGVTGTACSCCEALLDTGTSMTIYGPVKLVNTHKMLNARLENSYV 297

QY 300 VSCFATKYLPSITFIINGIKYPMATRAYIFKDSRGRCYSAFKENTVTRTRETWILGDALF 359

DB 298 VSDAVKTLSPVIFNIDYPLRPQAYIIK-IQNSCRSFQGGTENSLLNTWILGDIFL 356

QY 360 RRYFSVDFGRNDRIGLARAV 379

DB 357 RQYFSVDFGRNDRIGLARAV 376

```
RESULT 5
I46617
Pregnancy-associated glycoprotein - pig
C:Species: Sus scrofa domestica (domestic pig)
C>Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 22-Jun-1999
C:Accession: I46617
R:Safranska, B.; Xie, S.; Green, J.; Roberts, R.M.
Biol. Reprod. 53, 21-28, 1995
A>Title: Porcine pregnancy-associated glycoproteins: new members of the aspartic protein
A:Reference number: I46616; MUID:95399486; PMID:7669851
A:Accession: I46617
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-387 <SZA>
A:Cross-references: GB:L34361; NID:g508683; PIDN:AAA81531.1; PID:g1066345
C:Genetics:
A:Gene: PAG2
C:Superfamily: pepsin

Query Match 52.4%; Score 1053; DB 2; Length 387;
Best Local Similarity 54.0%; Pred. No. 3.3e-80;
Matches 210; Conservative 57; Mismatches 108; Indels 14; Gaps 7;

QY 1 MKWIVLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYR-----LSQISFRG 55
DB 1 MKWIVLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYR-----LSQISFRG 60
QY 56 SNLTIHPLRNIMNLYVGNITIGTPPOEFQVVDGSSDLWVPS-FCTMPACSAAPVWFRQ 114
DB 61 QKFSYQPLRNLYDMVYGNISIGTPPOEFQVVDGSSDLWVPSIYCKACVTHRSFNP 120
QY 115 LQSSTFQPTNKFTITTYGSGMKGLAYDVTIRIGDLVSTDPFGLSVVEYG--LEGRNYD 172
DB 121 SHSSTFHDGRGSIKLEVGSGMKSGFLGDTVRIGQLSTGQAGLSKETKAEHAIFD 180
QY 173 GVLGLNYPNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQQYKGE 232
DB 181 GILGLAYPSIAIKGTTVIDNLKQDQISEPVFAFYLSDDKEGSSVMFGVDKYYKGD 240
QY 233 LNWITPLEAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTR 292
DB 241 LKWVPLQTSYQWALDRITCRGRVIGCPGRCQAIVDTGTSMLHGSPKAVAKIHSLI--K 298
QY 293 PFDKSHYVSCFATKYLPSITFIINGIKYPMTARAYIFKD-SRGRCYSAFKE--NTVTRSR 349
DB 299 HFEKEYVPCNARKALPDIVETINNVDPVPAQAYIRKNNANNRCYSTFEDIMDTL-NQR 357
QY 350 ETWILGDAFLRRYFSVFDGRGNDRIGLARA 378
DB 358 ETWILGDVFLRLYFTVDEGQNRIGLAQA 386

RESULT 6
A38302
Pepsin (EC 3.4.23.-) F precursor - rabbit
C:Species: Oryctolagus cuniculus (domestic rabbit)
C>Date: 14-Jun-1991 #sequence_revision 20-Sep-1991 #text_change 08-Nov-1996
C:Accession: A38302
R:Kageyama, T.; Tanabe, K.; Koiwai, O.
J. Biol. Chem. 265, 17031-17038, 1990
A>Title: Structure and development of rabbit pepsinogens. Stage-specific zymogens, nucle
A:Reference number: A38302; MUID:91009127; PMID:2129536
A:Accession: A38302
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-389 <KAG>
A:Cross-references: GB:J05640
C:Superfamily: pepsin
C:Keywords: aspartic proteinase; hydrolase; protein digestion

Query Match 47.5%; Score 953; DB 2; Length 389;
```

```
Best Local Similarity 49.9%; Pred. No. 7.6e-72;
Matches 194; Conservative 61; Mismatches 124; Indels 10; Gaps 6;

QY 1 MKWIVLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYRLSQAISFRGS---N 57
DB 1 MKWILGLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYRPTKLLSGQDDPD 60
QY 58 LTIHPLRNIMNLYVGNITIGTPPOEFQVVDGSSDLWVPS-FCTMPACSAAPVWFRQLQ 116
DB 61 VSFEPLRNLYDAYIGTISIGTPPOEFQVVDGSSDLWVPSIYCSPPACGKNTNPNLL 120
QY 117 SSTFQPTNKFTITTYGSGMKGLAYDVTIRIGDLVSTDPFGLSVVEYG--LEGRNYDGV 174
DB 121 SSTEIVSGRPINIVYSGRMSGFLAYDVTQIAGLVDAQAFGLSQEPGKFMETAYVEDGI 180
QY 175 LGLNTPNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGS-VVMFGVDHQQYKGE 233
DB 181 LGLSYPSLSFEGITPVFDNLWAGLITQNLFAFYLSKEEGRNMLMLGVDPSYSGDL 240
QY 234 NWTIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTRP 293
DB 241 HWVPYSRPLYWQLAVDRISMGEAIGDCGCGQIVDTGTSLLIGPRDPVLNIQKIINAOH 300
QY 294 PDSKHY-VSCFATKYLPSITFIINGIKYPMTARAYIFKDSRGRCYSAFKENTVTRSR--E 350
DB 301 SHGGEYIDCDITSLPDIIFTIDGVDPVPASAYIRKSSVHCYCNFDESAHSEPEYE 360
QY 351 TWILGDAFLRRYFSVFDGRGNDRIGLARA 379
DB 361 VWVLGDVFLRLYFTVDRANNRIGLAPAV 389

RESULT 7
I46616
Pregnancy-associated glycoprotein - pig
C:Species: Sus scrofa domestica (domestic pig)
C>Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 22-Jun-1999
C:Accession: I46616
R:Safranska, B.; Xie, S.; Green, J.; Roberts, R.M.
Biol. Reprod. 53, 21-28, 1995
A>Title: Porcine pregnancy-associated glycoproteins: new members of the aspartic prot
A:Reference number: I46616; MUID:95399486; PMID:7669851
A:Accession: I46616
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-389 <SZA>
A:Cross-references: GB:L34360; NID:g508682; PIDN:AAA81530.1; PID:g1066344
C:Genetics:
A:Gene: PAG1
C:Superfamily: pepsin

Query Match 46.7%; Score 938; DB 2; Length 389;
Best Local Similarity 48.8%; Pred. No. 1.4e-70;
Matches 190; Conservative 67; Mismatches 122; Indels 10; Gaps 6;

QY 1 MKWIVLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYRLSQ-ISFRGS--- 56
DB 1 MKWILGLLGLVAFSECIYKIPRQVKTMRKTLGSKNMLKNFLKEHPYRNTMIQKGLKSLCS 60
QY 57 -NLTIHPLRNIMNLYVGNITIGTPPOEFQVVDGSSDLWVPS-FCTMPACSAAPVWFRQ 114
DB 61 PKISCLRIMNLYDMVYGNITIGTPPOLFSVIPDTASSDLWVPSNOCHSRACVTHRSFNP 120
QY 115 LQSSTFQPTNKFTITTYGSGMKGLAYDVTIRIGDLVSTDPFGLSVVE--YGLEGRNYD 172
DB 121 TLSSTFQSSNRTRVKLAPHSGLYSGLLGYDVTQIGRKSENAQAFGLSQSEPVKELENAFFD 180
QY 173 GVLGLNYPNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQQYKGE 232
DB 181 GVLGLYPSLAIOGTTVPFDNLKQGIPEPVFALVLTNTKGSVLMIGVDNNPFTGN 240
QY 233 LNWITPLEAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTR 292
DB 241 LKWVPLQTSYQWALDRITCRGRVIGCPGRCQAIVDTGTSMLHGSPKAVAKIHSLI--K 298
```

[illegible]

RESULT 9

PEHU

pepsin A (EC 3.4.23.1) 3 precursor [validated] - human

N:Alternate names: pepsinogen A isozyme 3

C:Species: Homo sapiens (man)

C:Date: 19-Feb-1984 #sequence_revision 19-Feb-1984 #text_change 08-Dec-2000

C:Accession: A00980; PX0023; S02663; F22434; I54252; PX0024

R:Sogawa, K.; Fujii-Kuriyama, Y.; Mizukami, Y.; Ichihara, Y.; Takahashi, K.

J. Biol. Chem. 258, 5306-5311, 1983

A:Title: Primary structure of human pepsinogen gene.

A:Reference number: A00980; MUID:83161158; PMID:6300126

A:Accession: A00980

A:Molecule type: DNA

A:Residues: 1-388 <SOG>

A:Cross-references: GB:J00279

R:Atsuda, S.B.P.; Tanji, M.; Kageyama, T.; Takahashi, K.

J. Biochem. 106, 920-927, 1989

A:Title: A comparative study on the NH2-terminal amino acid sequences and some other

A:Reference number: PX0023; MUID:90130402; PMID:2515193

A:Accession: PX0023

A:Molecule type: protein

A:Residues: 16-100 <ATH>

R:Foltmann, B.

FEBS Lett. 241, 69-72, 1988

A:Title: Activation of human pepsinogens.

A:Reference number: S02663; MUID:89065108; PMID:3197840

A:Accession: S02663

A:Molecule type: protein

A:Residues: 16-68 <FOL>

R:Ichihara, Y.; Sogawa, K.; Takahashi, K.

J. Biochem. 98, 483-492, 1985

A:Title: Isolation of human, swine, and rat prepepsinogens and calf preprochymosin, a

A:Reference number: A22434; MUID:86059312; PMID:2415509

A:Accession: F22434

A:Molecule type: protein

A:Residues: 1-15, 'XXX', 19-20, 'X', 22, 'XX', 25-26, 'X', 28 <ICH>

R:Evers, M.P.J.; Zelle, B.; Pieper, D.S.; Mager, W.H.; Planta, R.J.; Eriksson, A.W.;

Hum. Genet. 77, 182-187, 1987

A:Title: Molecular cloning of a pair of human pepsinogen A genes which differ by a G

A:Reference number: I54252; MUID:88006181; PMID:3115885

A:Accession: I54252

A>Status: translated from GB/EMBL/DBJ

A:Molecule type: DNA

A:Residues: 1-27, 'F', 29-73 <RES>

A:Cross-references: GB:M27598; NID:g189834; PIDN:AAA36431.1; PID:g189836

C:Genetics:

A:Gene: GDB:PGA3

A:Cross-references: GDB:I19482; OMIM:I69710

A:Map position: 11q13.1-11q13.5

A:Introns: 19/2; 73/3; 113/1; 152/3; 219/2; 258/2; 306/3; 339/3

C:Superfamily: pepsin

C:Keywords: aspartic proteinase; gastric juice; hydrolase; phosphoprotein; protein di

F:1-15/Domain: signal sequence #status experimental <SIG>

F:16-388/Product: pepsinogen A 3 #status experimental <ZYM>

F:16-62/Domain: activation peptide #status experimental <NPT>

F:60-388/Product: pepsin A 3, minor variant #status experimental <NPT>

F:63-388/Product: pepsin A 3 #status experimental <NAT>

F:94,277/Active site: Asp #status predicted

F:130/Binding site: phosphate (Ser) (covalent) #status predicted

Query Match 46.08; Score 923.5; DB 1; Length 388;

Best Local Similarity 49.5%; Pred. No. 2.2e-69;

Matches 191; Conservative 67; Mismatches 117; Indels 11; Gaps 8;

[illegible]

١٢٤

Db 1 MKWLLLLGLVASECINMYKVPILRKSLRRTLSERGLLKDFLKKHNLNLPARKYFPQWKAP 60
QY 57 NLT-IHPLRNIMNLVYVGNITIGTPQEFQVVDFTGSSDLWVPS-FCITMPACSAFVWFQ 114
Db 61 TLVDEOPLNLYDMYFTGIGTGAQDFVLDFGSSNLWVPSYCSSLACTNHNRFNP 120
QY 115 LOSSTFQPTNKTFTITVYGGSMKGFAYDVRIGDLVSTDQPFGLSVVEYG--LEGRNYD 172
Db 121 EDSSYQSTSETSVITYGTGSMTGILGYDVTQVGGISDTNQIFGLSETEPGSFLYYAPFD 180
QY 173 GVLGLNYPNIFSFGAIPFDNLKNGAISEPVFAFYLSKKNQEGSVVFMFGVDHQQYKGE 232
Db 181 GILGLAYSPSISSGATPVFDNIWNGQLVSQDLFSVLSADDOGSVVFPGIDSSYYTGS 240
QY 233 LNWPILEAGRWVHMDRISMKRTVIACSDGCEALVHTGTSIHGPGRLVNNIHRLI-RT 291
Db 241 LNWVPTVEGYWQITVDSITMNGEAIACAEQCAIVDTGTSLLTGPTSPIANIQSDIGAS 300
QY 292 RPFDSKHVYSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPFKENTVRT-SRE 350
Db 301 ENSDGMVYSCSAISSLPDIVFTINGIQVPPVPSAYILQ-SEGSCISGFGQMNLPTESGE 359
QY 351 TWILGDAFLRRYFVDFRGNDRIGLA 376
Db 360 LNWIGDVFIRQYFTVFERANNQVGLA 385

RESULT 12
PEMOAJ
pepsin A (EC 3.4.23.1) 1 precursor - Japanese macaque
N:Alternate names: pepsinogen A isozyme 1
C:Species: Macaca fuscata (Japanese macaque)
C>Date: 13-Aug-1986 #sequence_revision 19-Oct-1995 #text_change 18-Jun-1999
C:Accession: S19681; A91960; A92579; A00981
R:Kageyama, T.; Tanabe, K.; Koiwai, O.
Eur. J. Biochem. 202, 205-215, 1991
A:Title: Development-dependent expression of isozymogens of monkey pepsinogens and struc
A:Reference number: S19681; MUID:92037645; PMID:1935977
A:Accession: S19681
A:Molecule type: mRNA
A:Residues: 1-388 <KA2>
A:Cross-references: EMBL:X59752; NID:g38074; PIDN:CAA42424.1; PID:g38075
A:Note: parts of sequence, including amino ends of pepsinogen and activation intermediat
R:Kageyama, T.; Takahashi, K.
J. Biochem. 88, 9-16, 1980
A:Title: Monkey pepsinogens and pepsins. IV. The amino acid sequence of the activation p
A:Reference number: A91960; MUID:81006790; PMID:6773933
A:Accession: A91960
A:Molecule type: protein
A:Residues: 16-62 <KA2>
R:Kageyama, T.; Takahashi, K.
J. Biol. Chem. 261, 4395-4405, 1986
A:Title: The complete amino acid sequence of monkey pepsinogen A.
A:Reference number: A92579; MUID:86168132; PMID:3514596
A:Accession: A92579
A:Molecule type: protein
A:Residues: 41-261, 'D', 263-388 <KA3>
C:Comment: This is the major pepsin isozyme in juveniles and adults.
C:Comment: Activation is a one-step process.
C:Superfamily: pepsin
C:Keywords: aspartic proteinase; gastric juice; hydrolase; phosphoprotein; protein diges
F:1-15/Domain: signal sequence #status predicted <SIG>
F:16-62/Domain: activation peptide #status experimental <APT>
F:63-388/Product: pepsin A 1 #status experimental <ENZ>
F:94,277/Active site: Asp #status predicted
F:107-112,268-272,311-344/Disulfide bonds: #status experimental
F:130/Binding site: phosphate (Ser) (covalent) #status experimental

Query Match 45.6%; Score 915.5; DB 1; Length 388;
Best Local Similarity 48.7%; Pred. No. 1e-68;
Matches 188; Conservative 69; Mismatches 118; Indels 11; Gaps 7;
QY 1 MKWIVLLGLVAFSECIY-KIPLRQVKMTKRLTSGKNMLNFKLKEHPYRLSQISFRGSN-- 57

Db 1 MKWLLLLGLVALSECITYKVPILVRKKSRLRNLSRHGLLKDFLKKHNLNLPASKYFPQAEAP 60
QY 58 --LTIHPLRNIMNLVYVGNITIGTPQEFQVVDFTGSSDLWVPS-FCITMPACSAFVWFQ 114
Db 61 TLVDEOPLNLYDMYFTGIGTGAQDFVLDFGSSNLWVPSYCSSLACTNHNLFNP 120
QY 115 LOSSTFQPTNKTFTITVYGGSMKGFAYDVRIGDLVSTDQPFGLSVVEYG--LEGRNYD 172
Db 121 QDSSTYQSTSGTSLIYGTGSMTGILGYDVTQVGGISDTNQIFGLSETEPGSFLYYAPFD 180
QY 173 GVLGLNYPNIFSFGAIPFDNLKNGAISEPVFAFYLSKKNQEGSVVFMFGVDHQQYKGE 232
Db 181 GILGLAYSPSISSGATPVFDNIWNGQLVSQDLFSVLSADDOGSVVFPGIDSSYYTGS 240
QY 233 LNWPILEAGRWVHMDRISMKRTVIACSDGCEALVHTGTSIHGPGRLVNNIHRLI-RT 291
Db 241 LNWVPSVEGYWQISVDSITMNGEAIACAEQCAIVDTGTSLLTGPTSPIANIQSDIGAS 300
QY 292 RPFDSKHVYSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPFKENTVRT-SRE 350
Db 301 ENSDGMVYSCSAISSLPDIVFTINGIQVPPVPSAYILQ-SQGSCTSGFGQMDVPTESGE 359
QY 351 TWILGDAFLRRYFVDFRGNDRIGLA 376
Db 360 LNWIGDVFIRQYFTVFERANNQVGLA 385

RESULT 13
B30142
pepsin A (EC 3.4.23.1) 4 precursor - human
C:Species: Homo sapiens (man)
C>Date: 07-Jun-1990 #sequence_revision 20-Aug-1994 #text_change 29-Aug-1997
C:Accession: B30142; E22434
R:Evers, M.P.J.; Zelle, B.; Bebelman, J.P.; van Beusechem, V.; Kraakman, L.; Hoffer, G.
Genomics 4, 232-239, 1989
A:Title: Nucleotide sequence comparison of five human pepsinogen A (PGA) genes: evolu
A:Reference number: A91627; MUID:89233110; PMID:2714789
A:Accession: B30142
A:Molecule type: DNA
A:Residues: 1-27, 'F', 29-388 <EVE>
A:Note: the authors translated the codon TTC for residue 28 as Leu, GGC for residue 3
R:Ichihara, Y.; Sogawa, K.; Takahashi, K.
J. Biochem. 98, 483-492, 1985
A:Title: Isolation of human, swine, and rat prepepsinogens and calf preprochymosin, a
A:Reference number: A22434; MUID:86059312; PMID:2415509
A:Accession: E22434
A:Molecule type: protein
A:Residues: 1-15, 'XXX', 19-20, 'X', 22, 'XX', 25-26, 'X', 28 <ICH>
C:Genetics:
A:Gene: GDB:PGA4
A:Cross-references: GDB:119483; OMIM:169720
A:Map position: 11q13-11q13
A:Introns: 19/1; 73/3; 113/1; 152/3; 219/2; 258/2; 306/3; 339/3
C:Superfamily: pepsin
C:Keywords: aspartic proteinase; hydrolase; phosphoprotein; protein digestion; zymoge
F:1-15/Domain: signal sequence #status experimental <SIG>
F:16-59/Domain: activation peptide #status experimental <APT>
F:63-388/Product: pepsin A 4 #status predicted <MAT>
F:94,277/Active site: Asp #status predicted
F:107-112,268-272,311-344/Disulfide bonds: #status predicted
F:130/Binding site: phosphate (Ser) (covalent) #status predicted

Query Match 45.6%; Score 915.5; DB 2; Length 388;
Best Local Similarity 49.0%; Pred. No. 1e-68;
Matches 189; Conservative 69; Mismatches 117; Indels 11; Gaps 8;
QY 1 MKWIVLLGLVAFSECIY-KIPLRQVKMTKRLTSGKNMLNFKLKEH---PYRLSQISFRGS 56
Db 1 MKWLLLLGLVALSECIMYKVPILRKKSRLRNLSRHGLLKDFLKKHNLNLPARKYFPQWEAP 60
QY 57 NLT-IHPLRNIMNLVYVGNITIGTPQEFQVVDFTGSSDLWVPS-FCITMPACSAFVWFQ 114

[illegible][illegible]

Search completed: April 2, 2003, 17:45:06
Job time : 23 secs

GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:38:07 ; Search time 25 Seconds
(without alignments)
628.781 Million cell updates/sec

Title: us-09-273-164-32

Perfect score: 2008

Sequence: 1 MKWIVLLGLVAFSECIKIP.....RRYFVDFRGNDRIGLARAV 379

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1559.5	77.7	380	1 PAG1_BOVIN	Q29432 bos taurus
2	1387.5	69.1	382	1 PAG1_SHEEP	Q28755 ovis aries
3	1148.5	57.2	376	1 PAG2_BOVIN	Q28057 bos taurus
4	1035.5	51.6	420	1 PAG2_PIG	Q29079 sus scrofa
5	997.5	49.7	388	1 PAG_HORSE	Q28389 equus caball
6	963.5	48.0	388	1 PEPF_RABIT	P27823 oryctolagus
7	938	46.7	389	1 PAG1_PIG	Q29078 sus scrofa
8	924.5	46.0	388	1 PEP2_MACFU	P27677 macaca fusc
9	923.5	46.0	388	1 PEP4_HUMAN	P00790 homo sapien
10	920	45.8	387	1 PEP4_CALJA	Q9n284 callithrix
11	915.5	45.6	388	1 PEP1_MACFU	P03954 macaca fusc
12	914.5	45.5	388	1 PEP4_MACMU	P11489 macaca mula
13	914	45.5	387	1 PEP1_RABIT	P28712 oryctolagus
14	914	45.5	387	1 PEP3_RABIT	P27822 oryctolagus
15	909	45.3	387	1 PEP4_RABIT	P28713 oryctolagus
16	906.5	45.1	388	1 PEP4_MACFU	P27678 macaca fusc
17	901	44.9	387	1 PEP2_RABIT	P27821 oryctolagus
18	886.5	44.1	386	1 PEP4_PIG	P00791 sus scrofa
19	806.5	40.2	383	1 PEP2_CHICK	P16476 gallus gall
20	772.5	38.5	396	1 CATE_HUMAN	P14091 homo sapien
21	767.5	38.2	398	1 CATE_RAT	P16228 rattus norv
22	762.5	38.0	381	1 CHYM_CALJA	Q9n242 callithrix
23	741.5	36.9	397	1 CATE_MOUSE	P70289 mus musculu
24	738.5	36.8	396	1 CATE_RABIT	P43159 oryctolagus
25	737.5	36.7	381	1 CHYM_BOVIN	P00794 bos taurus
26	722	36.0	387	1 PEP4_CHICK	P00793 gallus gall
27	713.5	35.5	381	1 CHYM_SHEEP	P18276 ovis aries
28	701	34.9	391	1 CATE_CAVPO	P25796 cavia porce
29	696.5	34.7	388	1 PEP2_CALJA	Q9n2d3 callithrix
30	686.5	34.2	388	1 PEP3_HUMAN	P20142 homo sapien
31	681.5	33.9	392	1 PEP3_RAT	P04073 rattus norv
32	668.5	33.3	394	1 PEP3_CAVPO	P04411 cavia porce
33	667.5	33.2	377	1 PEP3_MACFU	P03955 macaca fusc

RESULT 1

ID	PAG1_BOVIN	STANDARD;	PRT;	380 AA.
AC	Q29432;			
DT	01-NOV-1997 (Rel. 35, Created)			
DT	01-NOV-1997 (Rel. 35, Last sequence update)			
DT	15-JUN-2002 (Rel. 41, Last annotation update)			
DE	Pregnancy-associated glycoprotein 1 precursor (EC 3.4.23.-) (PAG 1)			
DE	(Pregnancy-specific protein B) (PSP-B).			
GN	PAG1.			
OS	Bos taurus (Bovine).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;			
OC	Bovidae; Bovinae; Bos.			
OX	NCBI_TaxID=9913;			
RN	[1]			
RP	SEQUENCE FROM N.A., AND SEQUENCE OF 54-73.			
RC	TISSUE=Placenta;			
RX	MEDLINE=92052247; PubMed=1946444;			
RA	Xie S., Low B.G., Nagel R.J., Kramer K.K., Anthony R.V., Zoli A.P.,			
RA	Beckers J.-F., Roberts R.M.;			
RT	"Identification of the major pregnancy-specific antigens of cattle			
RT	and sheep as inactive members of the aspartic proteinase family.";			
RL	Proc. Natl. Acad. Sci. U.S.A. 88:10247-10251(1991).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=95347596; PubMed=7622048;			
RA	Xie S., Green J., Beckers J.-F., Roberts R.M.;			
RT	"The gene encoding bovine pregnancy-associated glycoprotein-1, an			
RT	inactive member of the aspartic proteinase family.";			
RL	Gene 159:193-197(1995).			
CC	-!- FUNCTION: APPEARS TO BE PROTEOLYTICALLY INACTIVE.			
CC	-!- SUBCELLULAR LOCATION: Extracellular.			
CC	-!- TISSUE SPECIFICITY: TROPHOBLAST AND PLACENTAL TISSUE. PRODUCED			
CC	SPECIFICALLY IN THE INVASIVE BINUCLEATE CELLS OF THE PLACENTA.			
CC	BECOMES DETECTABLE IN MATERNAL SERUM SOON AFTER IMPLANTATION.			
CC	-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.			
CC	-----			
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CC	entities requires a license agreement (See http://www.isb-sib.ch/announce/			
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CC	-----			
DR	EMBL; M73962; AAB53145.1; -			
DR	EMBL; L27832; AAA96331.1; -			
DR	EMBL; L27833; AAA96331.1; JOINED.			
DR	EMBL; L27834; AAA96331.1; JOINED.			
DR	HSSP; P00794; 4CMS.			
DR	MEROPS; A01.971; -			
DR	InterPro; IPR001461; AspproteaseA1.			
DR	InterPro; IPR001969; AspproteaseA1.			
DR	Pfam; PF00026; asp; 1.			
DR	PRINTS; PR00792; PEPSIN.			

ALIGNMENTS

34	648	32.3	398	1 CATD_CHICK	Q05744 gallus gall
35	645	32.1	324	1 PEP1_GADMO	P56272 gadus morhu
36	632.5	31.5	410	1 CATD_MOUSE	P18242 mus musculu
37	621	30.9	407	1 CATD_RAT	P24268 rattus norv
38	617	30.7	412	1 CATD_HUMAN	P07339 homo sapien
39	607.5	30.3	387	1 ASPP_AEDAE	Q03168 aedes aegyp
40	595	29.6	390	1 CATD_BOVIN	P80209 bos taurus
41	594	29.6	419	1 KDAP_MOUSE	O09043 mus musculu
42	577	28.7	345	1 CATD_PIG	P00795 sus scrofa
43	574.5	28.6	420	1 NAP1_HUMAN	O96009 homo sapien
44	555.5	27.7	509	1 APR1_ORYSA	Q42456 oryza sativ
45	554	27.6	400	1 REN1_SHEEP	P52115 ovis aries


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DR PROSITE; PS00141; ASP_PROTEASE; 1.
KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;
KW Zymogen; Antigen.
FT SIGNAL 1 15
FT PROPEP 16 53
FT CHAIN 54 380
FT ACT_SITE 89 89
FT ACT_SITE 270 270
FT DISULFID 102 107
FT DISULFID 261 265
FT DISULFID 303 337
FT CARBOHYD 57 57
FT CARBOHYD 74 74
FT CARBOHYD 125 125
FT CARBOHYD 182 182
FT CARBOHYD 182 182
FT CONFLICT 56 56
FT CONFLICT 60 60
FT CONFLICT 66 66
SQ SEQUENCE 380 AA; 42847 MW; 77D6FED68C445B6 CRC64;

Query Match 77.7%; Score 1559.5; DB 1; Length 380;
Best Local Similarity 78.2%; Pred. No. 2.3e-118;
Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

Qy 1 MKWIVLLGLVAFSEICIVKIPLRQVTKMRKTLGSKNMLNFKLKEHPYRLSQISFRGSLNLT 60
Dy 1 MKWVLLGLVAFSEICIVKIPLRRLTKMRNVVSGKNMLNFKLKEHAYLSQISFRGSLNLT 60
Qy 61 HPLRNTMNLVYVGNITIGTPPOEFQVVDGSSDLWVPS-ECTMPACSAFVWFRQLQST 119
Dy 61 HPLRNTMNLVYVGNITIGTPPOEFQVVDGSSDLWVPS-ECTMPACSAFVWFRQLQST 120
Qy 120 FQPTNKTFTTYGSGMKGLAYDVRIGDLVSTDPQGLSVVVEYGLEGRNVDGVLGLNY 179
Dy 120 FQPTNKTFTTYGSGMKGLAYDVRIGDLVSTDPQGLSVVVEYGLEGRNVDGVLGLNY 180
Qy 180 PNISFGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLI 239
Dy 180 PNISFGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWIPLI 240
Qy 240 EAGEWRVMDRISMRKTRVIACSDGCEALVHTGTSIEGPGRLVNNIHLIRTPFDSKH 299
Dy 240 EAGEWRVMDRISMRKTRVIACSDGCEALVHTGTSIEGPGRLVNNIHLIRTPFDSKH 300
Qy 300 VSCFATKPLPSITFLINGIKYPMATARAYIFKDSRGRCYSAFKENTVTRSTWILGD 359
Dy 300 VSCFATKPLPSITFLINGIKYPMATARAYIFKDSRGRCYSAFKENTVTRSTWILGD 360
Qy 360 RYFSVDFDRGNDRIGLARAV 379
Dy 360 RYFSVDFDRGNDRIGLARAV 380

RESULT 2
PAG1_SHEEP STANDARD; PRT; 382 AA.
AC Q28755;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Pregnancy-associated glycoprotein 1 precursor (EC 3.4.23.-) (PAG 1).
GN PAG1.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta;
RX MEDLINE=92052247; PubMed=1946444;
RA Xie S., Low B.G., Nagel R.J., Kramer K.K., Anthony R.V., Zoll A.P.,
RA Beckers J.-F., Roberts R.M.;

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RT "Identification of the major pregnancy-specific antigens of cattle
RT and sheep as inactive members of the aspartic proteinase family.";
RL Proc. Natl. Acad. Sci. U.S.A. 88:10247-10251(1991).
CC -!- FUNCTION: APPEARS TO BE PROTEOLYTICALLY INACTIVE.
CC -!- SUBCELLULAR LOCATION: Extracellular.
CC -!- TISSUE SPECIFICITY: TROPHOBLAST AND PLACENTAL TISSUE. PRODUCED
CC SPECIFICALLY IN THE INVASIVE BINUCLEATE CELLS OF THE PLACENTA.
CC BECOMES DETECTABLE IN MATERNAL SERUM SOON AFTER IMPLANTATION.
CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC -----
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CC -----
DR EMBL; M73961; AAB53144.1; -.
DR HSSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; 1.
KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;
KW Zymogen.
FT SIGNAL 1 15
FT PROPEP 16 ?
FT CHAIN ? 382
FT ACT_SITE 89 89
FT ACT_SITE 272 272
FT DISULFID 102 110
FT DISULFID 263 267
FT DISULFID 305 339
FT CARBOHYD 57 57
FT CARBOHYD 74 74
FT CARBOHYD 128 128
FT CARBOHYD 128 128
SQ SEQUENCE 382 AA; 42979 MW; D28E4D78B5BF8C CRC64;

Query Match 69.1%; Score 1387.5; DB 1; Length 382;
Best Local Similarity 71.5%; Pred. No. 1.7e-104;
Matches 274; Conservative 35; Mismatches 69; Indels 5; Gaps 3;

Qy 1 MKWIVLLGLVAFSEICIVKIPLRQVTKMRKTLGSKNMLNFKLKEHPYRLSQISFRGSLNLT 60
Dy 1 MKWVLLGLVAFSEICIVKIPLRRLTKMRNVVSGKNMLNFKLKEHAYLSQISFRGSLNLT 60
Qy 61 HPLRNTMNLVYVGNITIGTPPOEFQVVDGSSDLWVPS-CTMPA---CSAPVWFRQLQ 116
Dy 61 HPLRNTMNLVYVGNITIGTPPOEFQVVDGSSDLWVPS-CTMPA---CSAPVWFRQLQ 120
Qy 117 SSTFQPTNKTFTTYGSGMKGLAYDVRIGDLVSTDPQGLSVVVEYGLEGRNVDGVLG 176
Dy 117 SSTFQPTNKTFTTYGSGMKGLAYDVRIGDLVSTDPQGLSVVVEYGLEGRNVDGVLG 179
Qy 177 LNPNTSFGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWI 236
Dy 177 LNPNTSFGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVVMFGVDHQQYKGLNWI 239
Qy 237 PLTEAGEWRVMDRISMRKTRVIACSDGCEALVHTGTSIEGPGRLVNNIHLIRTPFDS 296
Dy 237 PLTEAGEWRVMDRISMRKTRVIACSDGCEALVHTGTSIEGPGRLVNNIHLIRTPFDS 299
Qy 297 KHYVSCFATKPLPSITFLINGIKYPMATARAYIFKDSRGRCYSAFKENTVTRSTWILGD 356
Dy 297 KHYVSCFATKPLPSITFLINGIKYPMATARAYIFKDSRGRCYSAFKENTVTRSTWILGD 359
Qy 357 AFLRRYFSVDFDRGNDRIGLARAV 379
Dy 357 AFLRRYFSVDFDRGNDRIGLARAV 382

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Db      1 MKWLVLLGLVALSECVILPLKMKMKTRETREKNLNNLEBQAYRLSK---NDSKITI   57
Qy     61 HPLRNIMNLVYGVNITIGTTPPEEQVFVDFTGSSDLWPSPF-CTMPACSAAPVWFQLQSST 119
       |||||:: |||||::|||||::|||||::|||||::|||||:: |||||:: |||||:: |||||::
Db     58 HPLRNYLDATYGVNITIGTTPPEERFVVFDTGCSANLWVPCTICTSPACYTHKTFNPQNSSS 117
Qy    120 PQTNPKNFTTYTGGSGSMKGFLAYTVTRIGDVLSDTDQFGLSVVEYGLEGGRNYDGVLGNLY 179
       |:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||::
Db    118 FREYGSPTIPFYGGIIQQIFGLGSTVRIGNLVSPESQFGSLSEBYGFDSLFPDFGILGLAF 177
Qy    180 PNISFGAIPFDNLKNQGALISEPVFAFYLSKKNQEGSVVMFGCGVDHQYKYGELNWLPI 239
       |:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||::
Db    178 PMAGIEDTIPIFDNLWSHGPAFVFAFYLTNTKPESGVVMFGGDHRYKYGELNWLPIVS 237
Qy    240 EAGRWRYHMDRISMKRVTVIACSDGCEALVHTGTSHIEGPGRVLNHNIRLIRTRPFDISKHY 299
       : :::: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||::
Db    238 QTSWHQJTSMMNISMNWGVTTCSCGCEALLDTGTSMIYGTKLVNINHLNMARNLENSEYV 297
Qy    300 VSCFATRYLPSITFIINGIKYPMATARIYFKDSRGRCYSAFKENTVTRTSRETWILGDAFL 359
       |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||::
Db    298 VSCDAVTLPPVIENINGIDYPLRPQAYIIK-IQNSCRSVFQGTENS LNTWILGDIFL 356
Qy    360 RRYFSVFDRGNDRIGLARAV 379
       |:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||:: |||||::
Db    357 RQYFSVFDRKNRRIGLAPAV 376

RESULT 4
PAGE2.PIC
ID PAGE2.PIC STANDARD; PRT; 420 AA.
AC AC Q29079; Q29017;
DT DT 01-NOV-1997 (Rel. 35, Created)
DT DT 01-NOV-1997 (Rel. 35, Last sequence update)
DE DE 15-JUN-2002 (Rel. 41, Last annotation update)
DE DE Pregnancy-associated glycoprotein 2 precursor (EC 3.4.23.-) (PAG 2).
GN GN PAG2.
OS OS Sus scrofa (Pig).
OC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OX OX Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
NCBI_TaxID=9823;
RN RN [1]
RP RP SEQUENCE FROM N.A.
RX RX MEDLINE=95399486; PubMed=7669851;
RA RA Safranaka B., Xie S., Green J., Roberts R.M.;
RT RT "Porcine pregnancy-associated glycoproteins: new members of the
RT RT aspartic proteinase gene family expressed in trophoctoderm.";
RL RL Biol. Reprod. 53:21-28(1995).
RN RN [2]
RP RP SEQUENCE FROM N.A.
RX RX TISSUE=Placenta;
RA RA Safranaka B., Xie S., Miura R., Roberts R.M.;
RL RL Submitted (OCT-1995) to the EMBL/GenBank/DBJ databases.
CC CC -1- SUBCELLULAR LOCATION: Extracellular.
CC CC -1- TISSUE SPECIFICITY: EXPRESSED THROUGHOUT THE CHORION, WITH THE
CC CC SIGNAL LOCALIZED EXCLUSIVELY OVER THE TROPHECTODERM.
CC CC -1- DEVELOPMENTAL STAGE: EXPRESSION WAS DETECTED AT DAY 15, COINCIDING
CC CC WITH THE BEGINNING OF IMPLANTATION, AND CONTINUED THROUGHOUT
CC CC GESTATION.
CC CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
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-----
CC CC ENBL; U39763; AAA92055.1;
DR DR ENBL; U41421; AAA92055.1; JOINED.
DR DR ENBL; U41422; AAA92055.1; JOINED.
DR DR ENBL; U39199; AAA92055.1; JOINED.
DR DR ENBL; U41423; AAA92055.1; JOINED.

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DR EMBL; U41424; AAA92055.1; JOINED.
DR EMBL; U39762; AAA92055.1; JOINED.
DR EMBL; L34361; AAA81531.1; -.
DR HSSP; P00797; 2REN.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp. 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;
KW Zymogen.
FT SIGNAL 1 15 POTENTIAL.
FT PROPEP 16 ? ACTIVATION PEPTIDE (POTENTIAL).
FT CHAIN ? 420 PREGNANCY-ASSOCIATED GLYCOPROTEIN 2.
FT ACT_SITE 94 94 BY SIMILARITY.
FT ACT_SITE 277 277 BY SIMILARITY.
FT DISULFID 107 112 BY SIMILARITY.
FT DISULFID 268 272 BY SIMILARITY.
FT DISULFID 341 376 BY SIMILARITY.
FT CARBOHYD 56 56 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 79 79 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CONFLICT 335 367 MISSING (IN REF. 1).
SQ SEQUENCE 420 AA; 47132 MW; 094153B6CIBIFCDB CRC64;

Query Match 51.6%; Score 1035.5; DB 1; Length 420;
Best Local Similarity 50.0%; Pred. No. 4.2e-76;
Matches 210; Conservative 57; Mismatches 110; Indels 43; Gaps 7;

QY 1 MKWIVLLGLVAFSECIVKIPLRQVKTMRKTLGSKNMLNFKLKEHPYR-----LSQISFRG 55
DB 1 MKWLVGLVALSDCLVMIPLTKVKSVSRESLREKGLLNFKLKEHPYNNMIQNLLSKNSHV 60
QY 56 SNLTHPLRNTMNLVYVGNITIGTPQEQVVDFTGSSDLWVPS-FCMPACAPVWFQ 114
DB 61 QKFSYQPLRLNLYVGNISIGTTPQEQVVDFTGSSDLWVPSIYCKSKACVTHRSFNP 120
QY 115 LOSSTFQPTNKTFTITYGSGMKGLAVDTVRIGDLVSTDPFGLSVVEYG--LEGRNYD 172
DB 121 SHSSTFHDGRGSIKLEYGSGMKSGELGQDTVRIGDLTSTGQAFGLSKETGKAFAHFD 180
QY 173 GVLGLYNIISFGAIPFDNLKNQGAISEPVAFYLSKNKQEGVVMFGVDHGYKGE 232
DB 181 GILGLAYFSIAIKGTTVIDNLKKQDISEPVAFYLSKDKKEGVSVMFGVDKYYKGD 240
QY 233 LNWPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGRLVNNIHLIR-- 290
DB 241 LKWVPLTQTSYQWIALDRITCGRVIGCPGCGQAIYDVTGSMHGPSKAVAKIHSLIKHF 300
QY 291 -----TRPFDKHYVSCFATKYLPSITFIINGIKYP 321
DB 301 EKEYVVPCKARKALPDIVFTINNVDYPPVPAQAYIRKYVVPCKARKALPDIVFTINNVDY 360
QY 322 MTARAYIFKD-SRGCYSAFKE--NTVTSRTWILGDVAFRLRYFSVDFRGNDRIGLARA 378
DB 361 VPAQAYIRKNNANNRNCYSTFEDMTL-NQREIWLIGDVFRLRYFTVYDEGQNRIGLAQA 419

RESULT 5
PAG_HORSE
ID PAG_HORSE STANDARD; PRT; 388 AA.
AC Q28389;
DC 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Pregnancy-associated glycoprotein precursor (EC 3.4.23.-) (PAG).
GN PAG.
OS Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE FROM N.A.
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RC TISSUE=Placenta;
RX MEDLINE=98221985; PubMed=9561214;
RA Green J., Xie S., Gan X., Roberts R.M.;
RT "An aspartic proteinase expressed in the equine placenta.";
RL Adv. Exp. Med. Biol. 436:163-167(1998).
CC -!- SUBCELLULAR LOCATION: Extracellular.
CC -!- TISSUE SPECIFICITY: TROPHOBLAST AND PLACENTAL TISSUE.
CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
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CC -----
CC EMBL; L38511; AAC14885.1; -.
DR HSSP; P20142; LAVF.
DR MEROPS; A01.051; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp. 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;
KW Zymogen.
FT SIGNAL 1 15 POTENTIAL.
FT PROPEP 16 ? ACTIVATION PEPTIDE (POTENTIAL).
FT CHAIN ? 388 PREGNANCY-ASSOCIATED GLYCOPROTEIN.
FT ACT_SITE 92 92 BY SIMILARITY.
FT ACT_SITE 275 275 BY SIMILARITY.
FT DISULFID 105 110 BY SIMILARITY.
FT DISULFID 266 270 BY SIMILARITY.
FT DISULFID 309 344 BY SIMILARITY.
FT CARBOHYD 356 356 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 388 AA; 42891 MW; 3787CC59PB612C5 CRC64;

Query Match 49.7%; Score 997.5; DB 1; Length 388;
Best Local Similarity 50.5%; Pred. No. 4.4e-73;
Matches 196; Conservative 72; Mismatches 111; Indels 9; Gaps 6;

QY 1 MKWIVLLGLVAFSECIVKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQ---ISFRGSN 57
DB 1 MKWFGVLGLVLTSECLVTIPLVKIKSLRENLEKMDLKEYLPFRLTTHKLLKHADSG 60
QY 58 LTHPLRNTMNLVYVGNITIGTPQEQVVDFTGSSDLWVPS-FCMPACAPVWFQ 116
DB 61 VAPEPRNYLDIAYMGIISVGTTPQEQVIFDTGSADLWVPSIYCSPACSNHNTFNP 120
QY 117 SSTFQPTNKTFTITYGSGMKGLAVDTVRIGDLVSTDPFGLSVVEYG--LEGRNYDGV 174
DB 121 SSTFVAGQPIKLYGTGKMSFGVYDTIKISSLVDRNQAFGLSVVEPDKILELATFDGI 180
QY 175 LGUNYPNISEGAIPFDNLKNQGAISEPVAFYLSKNKQEGSVVMFGVDHGYKSELN 234
DB 181 LGLSYSLSVKGVTPVFDNLWNQGLLSQKLFAYLSRKKGKSVVMFGVDHGYKSELN 240
QY 235 WIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGRLVNNIHLIRTPFP 294
DB 241 WVPKPLVQWISMDSISIKNGKVIACDGGQAIYDVTGSLGPDQAVNLNIQIARRS 300
QY 295 DS-KHYVSCFATKYLPSITFIINGIKYPMPTARAYIFKDSR-GRCYSAFKE-TRVTSRET 351
DB 301 TSEYFIDCDVAVNTLPDILFTIDGIPVPANAYIQDAALGICFSFEGNEDISNSEE 360
QY 352 WILGDAFLRRYFSVDFRGNDRIGLARAV 379
DB 361 WILGDFVRLRYFTVDFRGNDRIGLATAV 388

RESULT 6
PEPF_RABIT
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ID PEPF_RABIT STANDARD; PRT; 388 AA.
 AC P27823;
 DT 01-AUG-1992 (Rel. 23, Created)
 DT 01-AUG-1992 (Rel. 23, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Pepsin F precursor (EC 3.4.23.1).
 OS Oryctolagus cuniculus (Rabbit).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
 OX NCBI_TaxID=9986;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=91009127; PubMed=2129536;
 RA Kageyama T., Tanabe K., Koizumi O.;
 RT "Structure and development of rabbit pepsinogens. Stage-specific
 RT zymogens, nucleotide sequences of cDNAs, molecular evolution, and
 RT gene expression during development.";
 RL J. Biol. Chem. 265:17031-17038(1990).
 CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
 CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
 CC ALSO CLEAVED TO SOME EXTENT.
 CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
 CC aromatic, residues in P1 and P1' positions. Cleaves 1-Phe-I-val-2,
 CC 4-Gln-I-His-5, 13-Glu-I-Ala-14, 14-Ala-I-Leu-15, 15-Leu-I-Tyr-16,
 CC 16-Tyr-I-Leu-17, 23-Gly-I-Phe-24, 24-Phe-I-Phe-25 and 25-Phe-I-
 CC Tyr-26 bonds in the B chain of insulin.
 CC -!- DEVELOPMENTAL STAGE: EARLY POSTNATAL.
 CC -!- MISCELLANEOUS: THE EXPRESSION OF PEPSINOGEN GENES IS REGULATED BY
 CC HORMONES AND RELATED SUBSTANCES.
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
 CC -----
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 CC -----
 DR EMBL; M59238; AAA31440.1; -.
 DR PIR; A38302; A38302.
 DR HSP; P00794; 4CMS.
 DR MEROPS; A01.051; -.
 DR InterPro; IPR001461; AspproteaseA1.
 DR InterPro; IPR001969; Aspprotease_site.
 DR Pfam; PF00026; asp; 1.
 DR PRINTS; PR00792; PEPsin.
 DR PROSITE; PS00141; ASP_PROTEASE; 2.
 DR Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;
 KW Multigene family.
 FT SIGNAL 1 15
 FT PROPEP 16 58 ACTIVATION PEPTIDE.
 FT CHAIN 59 388 PEPsin F.
 FT ACT_SITE 92 92 BY SIMILARITY.
 FT ACT_SITE 275 275 BY SIMILARITY.
 FT DISULFID 105 110 BY SIMILARITY.
 FT DISULFID 266 270 BY SIMILARITY.
 FT DISULFID 309 343 BY SIMILARITY.
 SQ SEQUENCE 388 AA; 42786 MW; 24792BE393594B3A CRC64;

 Query Match 48.08; Score 963.5; DB 1; Length 388;
 Best Local Similarity 50.08; Pred. No. 2.4e-70;
 Matches 194; Conservative 61; Mismatches 124; Indels 9; Gaps 5;

 QY 1 MKWTLLGLVAFSCIVKIPLOVKTKRLTSLGKMLKNEKHEPYRLSQISFRGS---N 57
 DB 1 MKWLLGLVALSCLTIPLMKVKSMRENLENDILLDYLEKHPYRPTKLLSGQQDPD 60

 QY 58 LTIHPLRNINLVVGNITIGTPQEQVQVFDGTGSSDLWPS-ECTMPACSAFYVFRLOQ 116
 DB 61 VSFPEPLNYLDLAYIGIISGTGPQEFKVLDTGSADLWPSIYCSPACCKHFTFNPL 120

 QY 117 SSTFQPTNKTFTITYGSGMKGLAYDTVRIGDLVSTDDQFGLSVVEYG--LEGRNVDG 174

DB 121 SSTFLVSGRPINIVYSGRMSGFLAYDTVQIAGLVDAQAFGLSQEPKGFMEYAVFDGI 180
 QY 175 LGLNYPNITSFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVWFGVDHGYKGLN 234
 DB 181 LGLSVPSLSFEGITPVFDNLWAGLISQNLFAFYLSKKEGSMMLGGLGVDPYSYSGDLH 240
 QY 235 WPLIEAGEWRVHMDRISMRKRVIAICSDCEALVHTGTSHIEGPGRLVNNIHLIRTPF 294
 DB 241 WVPVSRPLYWQLAVDRISMGEAIGCDSCQGVITDGTSLILIGRPDVLNIQIINAQHS 300

 QY 295 DSKHY-VSCFATKYLPSITFIINGIKYPMARAYIPKDSGRGRCYSAFKENTVTSR--ET 351
 DB 301 HGEYIICDDTTSTLPDIIFTDGVDPVPASAYIRKSVHGCYSNFDSEAAHESEPYEV 360
 QY 352 WILGDAFLRRYVSFVDRGNDRIGLARAV 379
 DB 361 WVLGDFVFLRXYFTVFDNRNIGLAPAV 388

 RESULT 7
 PAGL_PIG STANDARD; PRT; 389 AA.
 AC Q23078;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Pregnancy-associated glycoprotein 1 precursor (EC 3.4.23.-) (PAG 1).
 GN PAG1.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=95399486; PubMed=7669851;
 RA Szafranska B., Xie S., Green J., Roberts R.M.;
 RT "porcine pregnancy-associated glycoproteins: new members of the
 RT aspartic proteinase gene family expressed in trophoctoderm.";
 RL Biol. Reprod. 53:21-28(1995).
 CC -!- FUNCTION: APPEARS TO BE PROTEOLYTICALLY INACTIVE.
 CC -!- SUBCELLULAR LOCATION: Extracellular.
 CC -!- TISSUE SPECIFICITY: EXPRESSED THROUGHOUT THE CHORION, WITH THE
 CC SIGNAL LOCALIZED EXCLUSIVELY OVER THE TROPHOCTODERM.
 CC -!- DEVELOPMENTAL STAGE: EXPRESSION WAS DETECTED AT DAY 15, COINCIDING
 CC WITH THE BEGINNING OF IMPLANTATION, AND CONTINUED THROUGHOUT
 CC GESTATION.
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
 CC -----
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL; L34360; AAA81530.1; -.
 DR HSP; P00797; 2REN.
 DR MEROPS; A01.971; -.
 DR InterPro; IPR001461; AspproteaseA1.
 DR InterPro; IPR001969; Aspprotease_site.
 DR Pfam; PF00026; asp; 1.
 DR PRINTS; PR00792; PEPsin.
 DR PROSITE; PS00141; ASP_PROTEASE; 1.
 DR Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;
 KW Zymogen.
 FT SIGNAL 1 15 POTENTIAL.
 FT PROPEP 16 ? ACTIVATION PEPTIDE (POTENTIAL).
 FT CHAIN ? 389 PREGNANCY-ASSOCIATED GLYCOPROTEIN 1.
 FT ACT_SITE 94 94 BY SIMILARITY.
 FT ACT_SITE 277 277 BY SIMILARITY.
 FT DISULFID 107 112 BY SIMILARITY.

```

FT DISULFID 268 272 BY SIMILARITY.
FT DISULFID 311 345 BY SIMILARITY.
FT CARBOHYD 79 79 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 130 130 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 348 348 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 389 AA; 43533 MW; 764A1D2C17A3F416 CRC64;

Query Match 46.7%; Score 938; DB 1; Length 389;
Best Local Similarity 48.8%; Pred. No. 2.7e-68;
Matches 190; Conservative 67; Mismatches 122; Indels 10; Gaps 6;

Qy 1 MKWIVLLGLVAFSECIIVKIPRQVKTMRKTLGSKNMLKFLKEHPYRLSQ-ISFRGS--- 56
Db 1 MKWLVILGLVALSECIIVPLTKVKSIRENLREKDLLLNFLKEHPYRNIMQLKGLKGLCS 60

Qy 57 -NLTIHLPLRNIMLVYVGNITIGTPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRQ 114
Db 61 PKISCLRLWYLDVYVGNITIGTPQLFVSVIDFTASDLWVPSNOCHSRACVTHRSFNP 120

Qy 115 LOSSTFQPTNKTFTTYTGGSGMKGLAVDTVRIGDLVSTDPQFGLSVVE--YGLEGRNYD 172
Db 121 TLSSTFQSSNRVTKLAPHSLGSLGLGYDTVGIRFKSENQAFGLSQSPVKELENAPFD 180

Qy 173 GVLGLNYPNISEGAIPFDNLKNGATSEPVFAFLSKNKGEGSVVMFGVDHQYKGE 232
Db 181 GVLGLYPSLAIGTTPVFDNLKNGQIPPEPVFALYSTNTKGSVLMITGGVDNNEFTGN 240

Qy 233 LNWIPLEAGWRVHMDRSMKRTVIACSDGCEALVHGTSHIEGRLVNNIHLIRTR 292
Db 241 LKWVPLSARNYQIILDRITWGVVGTGRCQAILDGSAFLGPGTSIOISIKIQRAR 300

Qy 293 PFDKHYVSCFATKLPSTFTINGIKYPMATARYIFKDSR-GRGYSAPKENTVTRTS-E 350
Db 301 FIENYQVRCARTLADFIINNVQVPPVPARVIRKGSTPRRCYSNFGSTESLGKEE 360

Qy 351 TWILGDALRRYFVDFRGNDRIGLARV 379
Db 361 TWILGEVFLRLYFTVDFRGNDRIGLARV 389

RESULT 8
PEP2_MACFU STANDARD; PRT; 388 AA.
AC P27677;
DT 01-AUG-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DE Pepsin A-2/A-3 precursor (EC 3.4.23.1) (Pepsin III-2/III-1).
OS Macaca fuscata fuscata (Japanese macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9543;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 16-70.
RC TISSUE=Gastric mucosa;
RA MEDLINE=92037645; PubMed=1935977;
RA Kageyama T., Tanabe K., Koiwai O.;
RT "Development-dependent expression of isozymes of monkey
RT pepsinogens and structural differences between them.";
RL Eur. J. Biochem. 202:205-215(1991).
CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY. ALTHOUGH BONDS
CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
CC ALSO CLEAVED TO SOME EXTENT.
CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
CC aromatic, residues in p1 and p1' positions. Cleaves 1-Phe-1-Val-2,
CC 4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,
CC 16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-
CC Tyr-26 bonds in the B chain of insulin.
CC -!- DEVELOPMENTAL STAGE: PEP A-2 IS PREDOMINANT AT THE 4-MONTH STAGE.
CC PEP A-3 IS PREDOMINANT AT FETAL STAGES.
CC -!- PTM: PEP A-2 IS PHOSPHORYLATED, BUT NOT PEP A-3.
CC -!- PTM: EACH PEPSINOGEN IS CONVERTED TO CORRESPONDING PEPSIN AT PH

```

RESULT 9
PEPA_HUMAN STANDARD; PRT; 388 AA.

AC P00790;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, last sequence update)
DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Pepsin A precursor (EC 3.4.23.1).
GN PGA3 AND PGA4 AND PGA5.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOZYME 5).
RX MEDLINE=83161158; PubMed=6300126;
RA Sogawa K., Fujii-Kuriyama Y., Mizukami Y., Ichihara Y., Takahashi K.;
RT "Primary structure of human pepsinogen gene.";
RL J. Biol. Chem. 258:5306-5311(1983).
RN [2]
RP SEQUENCE FROM N.A. (ISOZYME 5).
RC TISSUE=Placenta;
RX MEDLINE=89233110; PubMed=2714789;
RA Evers M.P.J., Zelle B., Bebelman J.P., van Beusechem V., Kraakman L.,
RA Hoffer M.J.V., Pronk J.C., Mager W.H., Planta R.J., Eriksson A.W.,
RA Frants R.R.;
RT "Nucleotide sequence comparison of five human pepsinogen A (PGA)
genes: evolution of the PGA multigene family.";
RL Genomics 4:232-239(1989).
RN [3]
RP PARTIAL SEQUENCE OF 1-28.
RX MEDLINE=86059312; PubMed=2415509;
RA Ichihara Y., Sogawa K., Takahashi K.;
RT "Isolation of human, swine, and rat prepepsinogens and calf
preprochymosin, and determination of the primary structures of their
NH2-terminal signal sequences.";
RL J. Biochem. 98:483-492(1985).
RN [4]
RP SEQUENCE OF 16-100 (ISOZYME 2; 3; 3A; 4 AND 5).
RX MEDLINE=90130402; PubMed=2515193;
RA Ahauda S.B.P., Tanji M., Kageyama T., Takahashi K.;
RT "A comparative study on the NH2-terminal amino acid sequences and
some other properties of six isozymic forms of human pepsinogens and
pepsins.";
RL J. Biochem. 106:920-927(1989).
RN [5]
RP SEQUENCE OF 16-68 (ISOZYME 3 AND 5).
RX MEDLINE=89065108; PubMed=3197840;
RA Foltmann B.;
RT "Activation of human pepsinogens.";
RL FEBS Lett. 241:69-72(1988).
RN [6]
RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
RX MEDLINE=95392399; PubMed=7663352;
RA Fujinaga M., Chernaia M.M., Tarasova N.I., Mosimann S.C.,
RA James M.N.G.;
RT "Crystal structure of human pepsin and its complex with pepstatin.";
RL Protein Sci. 4:960-972(1995).
CC -1- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
ALSO CLEAVED TO SOME EXTENT.
CC -1- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
aromatic, residues in p1 and p1' positions. Cleaves 1-Phe-1-Val-2,
4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,
16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-
Tyr-26 bonds in the B chain of insulin.
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; J00287; AAA98529.1; -
DR EMBL; J00279; AAA98529.1; JOINED.
DR EMBL; J00280; AAA98529.1; JOINED.
DR EMBL; J00281; AAA98529.1; JOINED.
DR EMBL; J00282; AAA98529.1; JOINED.
DR EMBL; J00283; AAA98529.1; JOINED.
DR EMBL; J00284; AAA98529.1; JOINED.
DR EMBL; J00285; AAA98529.1; JOINED.
DR EMBL; J00286; AAA98529.1; JOINED.
DR EMBL; M26032; AAA60061.1; -
DR EMBL; M26025; AAA60061.1; JOINED.
DR EMBL; M26026; AAA60061.1; JOINED.
DR EMBL; M26027; AAA60061.1; JOINED.
DR EMBL; M26028; AAA60061.1; JOINED.
DR EMBL; M26029; AAA60061.1; JOINED.
DR EMBL; M26030; AAA60061.1; JOINED.
DR EMBL; M26031; AAA60061.1; JOINED.
DR PIR; A00980; PERU.
DR PIR; A30142; A30142.
DR PIR; B30142; B30142.
DR PIR; A22434; A22434.
DR PIR; PX0023; PX0023.
DR PIR; PX0024; PX0024.
DR PIR; PX0025; PX0025.
DR PIR; PX0026; PX0026.
DR PIR; PX0027; PX0027.
DR PIR; S02653; S02653.
DR PIR; S02654; S02654.
DR PDB; IPSN; 20-APR-95.
DR PDB; IPSO; 20-APR-95.
DR MEROPS; A01.001; -
DR Genew; HGNC:8885; PGA3.
DR Genew; HGNC:8886; PGA4.
DR Genew; HGNC:8887; PGA5.
DR MIM; 169710; -
DR MIM; 169720; -
DR MIM; 169730; -
DR MIM; 169700; -
DR InterPro; IPR001461; AsproteaseA1.
DR InterPro; IPR001969; Asprotease_site.
DR InterPro; IPR001791; Laminin_G.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PS00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;
KW Phosphorylation; 3D-structure; Polymorphism.
FT SIGNAL 1 15
FT PROPEP 16 62 ACTIVATION PEPTIDE.
FT CHAIN 63 388 PEPSIN A.
FT MOD_RES 130 130 PHOSPHORYLATION (POTENTIAL).
FT ACT_SITE 94 94
FT DISULFID 107 112 BY SIMILARITY.
FT DISULFID 268 272 BY SIMILARITY.
FT DISULFID 311 344 BY SIMILARITY.
FT VARIANT 28 28 L-> F (IN ISOZYME 5).
FT VARIANT 58 58 /FTIQ=VAR_006481.
FT VARIANT 92 92 E-> K (IN ISOZYMES 3A, 4 AND 5).
FT VARIANT 222 222 /FTIQ=VAR_006482.
FT VARIANT 222 222 V-> L (IN ISOZYMES 4 AND 5).
FT VARIANT 265 265 /FTIQ=VAR_006483.
FT VARIANT 265 265 Q-> K.
FT VARIANT 353 353 /FTIQ=VAR_006484.
FT VARIANT 376 376 A-> T.
FT VARIANT 376 376 L-> V.
FT VARIANT 376 376 /FTIQ=VAR_006485.
FT VARIANT 376 376 D-> E.
FT /FTIQ=VAR_006487.

```

SQ SEQUENCE 388 AA: 41977 MW: C9CB89BA08F4D78B CRC64;
Query Match 46.0%; Score 923.5; DB 1; Length 388;
Best Local Similarity 49.5%; Pred. No. 4e-67;
Matches 191; Conservative 67; Mismatches 117; Indels 11; Gaps 8;

QY 1 MKWIVLLGLVAFSECV-KIPLRQVKTMRKTLGSKNMLKNEFLKEH---PYRLSQISFRGS 56
DB 1 MKWILLGLVAFSECVIMKYVPLIRKKSRLRRLSERGLLKDFLKHNLPARKYFPQWEAP 60

QY 57 NLT-IHPLRNIMLVYVGNITIGTPPOEFQVVDFTGSDSLWVPS-FCMPACAPVWFRQ 114
DB 1 TLVDEQPLENLDMEYFTGIGTIGTPAQDFTVVDFTGSSNLWVPSYVCSLACTNHNREN 120

QY 115 LQSTFQPTNKTFTITYGSGNKGFLAYDVTVRIGDLVSTDQPGFLSVVEYG--LEGRNYD 172
DB 121 EDSSTQSTSTSVTITGTSMTGILGYDVTQVGGISDNTQIFGLSETEPGSFLLYAPFD 180

QY 173 GVLGLNYPNISFSGAIPFDNLKNOGALSEPVEAFYLSKNKGSGVVMFGVDHGYKGE 232
DB 181 GILGLAYPSISSGATPVFDNIWNOGLVSDQLFSVYLSADDSQGSVWIFGGIDSSYITGS 240

QY 233 LNWIPLEAGEWRVHMDRISMRTVIAAGSDGCEALVHTGTSHIEGPGRLVNNIHRLI-RT 291
DB 241 LNWVPVTEGVWQITVDSITMNGEAIACGCAIADVTGTSLLTGTSPIANIQSDIGAS 300

QY 292 RPFDSKHVYSCFATKYLPSITFIINGIKYPMATRAYIFKDSGRGRCYSFAKENTVRT-SRE 350
DB 301 ENSDGMVWSCSAISLSPDIVFTINGVQVPPPSAYILQ-SEGSCISGFGQGNLPTESGE 359

QY 351 TWILGDAFLRRYFSVDRGNDRIGLA 376
DB 360 LWILGDVFIQRYFAVFDNRANNQVGLA 384

RESULT 10
PEPA_CALJA STANDARD; PRT; 387 AA.
AC Q9N2D4;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Pepsin A precursor (EC 3.4.23.1).
GN PGA.
OS Callithrix jacchus (Common marmoset).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae;
OC Callithrix.
OX NCBI_TaxID=9483;
RN [1]
RP SEQUENCE FROM N.A., SEQUENCE OF 16-25, FUNCTION, AND ENZYME
REGULATION.
RC TISSUP-Gastric mucosa;
RX MEDLINE=20250834; PubMed=10788784;
RA Kageyama T.;
RT "New World monkey pepsinogens A and C, and prochymosins. Purification,
RT characterization of enzymatic properties, cDNA cloning, and molecular
RT evolution.";
RL J. Biochem. 127:761-770(2000).
CC -1- FUNCTION: Shows particularly broad specificity; although bonds
CC also cleaved to some extent.
CC -1- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
CC aromatic, residues in p1 and p1' positions. Cleaves 1-Phe-1-Val-2,
CC 4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,
CC 16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-
CC Tyr-26 bonds in the B chain of insulin.
CC -1- ENZYME REGULATION: Inhibited by pepstatin.
CC -1- MISCELLANEOUS: The optimal pH is around 2.
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; AB038384; BAA90871.1; -.
DR HSSP; P00790; 1PSN.
DR MEROPS; A01.001; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;
FT SIGNAL 1 15
FT PROPEP 16 61 ACTIVATION PEPTIDE (BY SIMILARITY).
FT CHAIN 62 387 PEPsin A.
FT MOD_RES 129 129 PHOSPHORYLATION (BY SIMILARITY).
FT ACT_SITE 93 93 BY SIMILARITY.
FT ACT_SITE 276 276 BY SIMILARITY.
FT DISULFID 106 111 BY SIMILARITY.
FT DISULFID 267 271 BY SIMILARITY.
FT DISULFID 310 343 BY SIMILARITY.
SQ SEQUENCE 387 AA: 41563 MW: 7A7968AA568464BD CRC64;
Query Match 45.8%; Score 920; DB 1; Length 387;
Best Local Similarity 48.6%; Pred. No. 7.6e-67;
Matches 187; Conservative 68; Mismatches 120; Indels 10; Gaps 7;

QY 1 MKWIVLLGLVAFSECV-KIPLRQVKTMRKTLGSKNMLKNEFLKEHRYLSQISF-RGSNLT 59
DB 1 MKWILLGLVAFSECVIMKYVPLIRKKSRLRRLSERGLLKDFLKHNLPARKYFPQGEAT 60

QY 60 I---HPLRNIMLVYVGNITIGTPPOEFQVVDFTGSDSLWVPS-FCMPACAPVWFRQL 115
DB 61 MIANQPLVNYLDMEYFTGIGTIGTPAQEFTVFDFTGSSNLWVPSYVCSLACTNHNREN 120

QY 116 QSTFQPTNKTFTITYGSGNKGFLAYDVTVRIGDLVSTDQPGFLSVVEYG--LEGRNYD 173
DB 121 ESTTYQSTSTSVTITGTSMTGILGYDVTQVGGIADNTQIFGLSETEPGSFLLYSPFD 180

QY 174 VGLNYPNISFSGAIPFDNLKNOGALSEPVEAFYLSKNKGSGVVMFGVDHGYKGE 233
DB 181 ILGLAYPSISSGATPVFDNIWNOGLVSDQLFSVYLSNDQSGVVMFGIDSSYITGSL 240

QY 234 NWIPLEAGEWRVHMDRISMRTVIAAGSDGCEALVHTGTSHIEGPGRLVNNIHRLI-RTR 292
DB 241 NWVPVTEGVWQITVDSITMNGEAIACGCAIADVTGTSLLTGTSPIANIQSYIGASE 300

QY 293 RPFDSKHVYSCFATKYLPSITFIINGIKYPMATRAYIFKDSGRGRCYSFAKENTVRTS-RET 351
DB 301 NSNGEMVWSCSAISLSPDIVFTINGVQVPPPSAYILQD-EGGCTSGFGQGNLPTAYGEL 359

QY 352 WILGDAFLRRYFSVDRGNDRIGLA 376
DB 360 WILGDVFIQRYFAVFDNRANNQVGLA 384

RESULT 11
PEPI_MACFU STANDARD; PRT; 388 AA.
AC P03954;
DT 23-OCT-1986 (Rel. 02, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Pepsin A-1 precursor (EC 3.4.23.1) (Pepsin III-3).
GN PGA.
OS Macaca fuscata fuscata (Japanese macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
```

NCBI_TaxID=9543;
 [1]
 SEQUENCE FROM N.A., AND SEQUENCE OF 16-70.
 TISSUB=Gastric mucosa;
 MEDLINE=92037645; PubMed=1935977;
 RA Kageyama T., Tanabe K., Koikai O.;
 RT "Development-dependent expression of isozymogens of monkey
 RL pepsinogens and structural differences between them.";
 RL Eur. J. Biochem. 202:205-215(1991).
 [2]
 SEQUENCE OF 16-62.
 MEDLINE=81006790; PubMed=6773933;
 RA Kageyama T., Takahashi K.;
 RT "Monkey pepsinogens and pepsins. IV. The amino acid sequence of the
 RL activation peptide segment of Japanese monkey pepsinogen.";
 RL J. Biochem. 88:9-16(1980).
 [3]
 SEQUENCE OF 41-388.
 MEDLINE=86168132; PubMed=3514596;
 RA Kageyama T., Takahashi K.;
 RT "The complete amino acid sequence of monkey pepsinogen A.";
 RL J. Biol. Chem. 261:4395-4405(1986).
 CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
 CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
 CC ALSO CLEAVED TO SOME EXTENT.
 CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
 CC aromatic, residues in P1 and P1' positions. Cleaves 1-Phe-1-Val-2,
 CC 4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,
 CC 16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-
 CC Tyr-26 bonds in the B chain of insulin.
 CC -!- DEVELOPMENTAL STAGE: PREDOMINANT AT THE JUVENILE & ADULT STAGES.
 CC -!- MISCELLANEOUS: THE EXPRESSION OF PEPsin GENES IS REGULATED BY
 CC HORMONES AND RELATED SUBSTANCES.
 CC -!- MISCELLANEOUS: EACH PEPsin GENES IS CONVERTED TO CORRESPONDING
 CC PEPsin AT PH 2 IN PART AS A RESULT OF THE RELEASE OF A 47 AA
 CC ACTIVATION SEGMENT AND IN PART AS A RESULT OF STEPWISE PROTEOLYTIC
 CC CLEAVAGE VIA AN INTERMEDIATE FORM(S).
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.

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 or send an email to license@isb-sib.ch).

 EMBL: X59752; CAA42424.1; -;
 DR PIR; A00981; PEMQAJ.
 DR PIR; S19681; S19681.
 DR HSSP; P00790; IFSN.
 DR MEROPS; A01.001; -;
 DR InterPro; IPR001461; AsproteaseA1.
 DR InterPro; IPR001969; AsproteaseA1.
 DR InterPro; IPR001791; Laminin_G.
 DR Pfam; PF00026; asp; 1.
 DR PRINTS; PR00792; PEPsin.
 DR PROSITE; PS00141; ASP_PROTEASE; 2.
 KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Phosphorylation;
 KW Multigene family; Signal.
 FT SIGNAL 1 15
 FT PROPEP 16 40 ACTIVATION PEPTIDE.
 FT PROPEP 41 62 ACTIVATION PEPTIDE.
 FT CHAIN 63 388
 FT DISULFID 107 112
 FT DISULFID 268 272
 FT DISULFID 311 344
 FT ACT_SITE 94 94
 FT ACT_SITE 277 277
 FT MOD_RES 130 130 PHOSPHORYLATION.
 FT CONFLICT 262 262 N -> D (IN REF. 3).
 SQ SEQUENCE 388 AA; 41623 MW; 48C49B0A69FD7516 CRC64;

Query Match 45.6%; Score 915.5; DB 1; Length 388;
 Best Local Similarity 48.7%; Pred. No. 1.8e-66;
 Matches 188; Conservative 69; Mismatches 118; Indels 11; Gaps 7;
 QY 1 MKWIVLLGLVAFSECIIV-KIPLQOVKTRMTKLTSCKNMLKFLKEHPYRLSISFRGSN-- 57
 DB 1 MKWLLLLGLVAFSECIIVKPLVRKKSRLRNLSLSEHGLKDFLKKHNLNLPASKYFPQAEAP 60
 QY 58 --LTIHPLRNLIMLVVGNITIGTPPOEFQVVFDTGSSDLWVPS-FCITMPACSAVPVWERQ 114
 DB 61 TLIDEOPLENLYDVEFGTIGTIPADFTVIFDTGSNLWVPSVYCSSLACTNHNLFNP 120
 QY 115 LQSTFQPTNKTITTYGSGMKFLAYDVRIGDLVSTQDPFLGSVVEYG--LEGRNYD 172
 DB 121 QDSSTQTSISGTLISYGTGSMGILGYDIVQVGGISDTNQIFGLSETPGSFYYAPFD 180
 QY 173 GVILGNYPNISFGAIPFDNLKNQGAISEPVFAFYLSKNKQEGSVVMFGVDHYQYKE 232
 DB 181 GILGLAYPSISSGATPVFDNIWDQGLVSDLSFVLSADDDQSGSVVIFGGIDSSYYTGS 240
 QY 233 LNWIPLEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRLI-RT 291
 DB 241 LNWVPYSVEGYWQISVDSITMNGEATACAEQCAIVDTGTSLLTGTSPIANIQSDIGAS 300
 QY 292 RPDSKHVYSCFATKPLPSITETIINGIKYPMETARAYIFKDSRGRCYSAFKENTYRT-SRE 350
 DB 301 ENSDGMVYSCSAISSLPDIVFTINGIQYPPVPSAYILQ-SQGSCTSGFGQMDVPTESGE 359
 QY 351 TWILGDALRRYFVSFDRGNDRIGLA 376
 DB 360 LWILGDVFIQYFTVFDNRANNVGLA 385
 RESULT 12
 PEPsin, MACMU
 ID PEPsin, MACMU STANDARD; PRT; 388 AA.
 AC P11489;
 DT 01-OCT-1989 (Rel. 12, Created)
 DT 01-OCT-1989 (Rel. 12, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Pepsin A precursor (EC 3.4.23.1).
 GN PGA.
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
 OC Cercopithecoidea; Macaca.
 OX NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=88313666; PubMed=2900796;
 RA Evers M.P.J., Zelle B., Bebelman J.P., Pronk J.C., Mager W.H.,
 RA Planta R.J., Eriksson A.W., Frants R.R.;
 RT "Cloning and sequencing of rhesus monkey pepsinogen A cDNA.";
 RL Gene 65:179-185(1988).
 [2]
 RP REVISION.
 RA Zelle B.;
 RL Submitted (SEP-1988) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
 CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
 CC ALSO CLEAVED TO SOME EXTENT.
 CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
 CC aromatic, residues in P1 and P1' positions. Cleaves 1-Phe-1-Val-2,
 CC 4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,
 CC 16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-
 CC Tyr-26 bonds in the B chain of insulin.
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.

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CC -----

DR EMBL; M20788; AAA36902.1; -

DR PIR; J03039; PENQAR.

DR HSSP; P00790; 1PSN.

DR MEROPS; A01.001; -

DR InterPro; IPR001461; AspproteaseA1.

DR InterPro; IPR001969; AspproteaseA1.

DR InterPro; IPR001791; Laminin_G.

DR Pfam; PF00026; asp; 1.

DR PRINTS; PR00792; PEPsin.

DR PROSITE; PS00141; ASP_PROTEASE; 2.

KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;

KW Phosphorylation.

FT SIGNAL 1 15

FT PROPEP 16 62

FT CHAIN 63 388

FT MOD_RES 130 130

FT ACT_SITE 94 94

FT ACT_SITE 277 277

FT DISULFID 107 112

FT DISULFID 268 272

FT DISULFID 311 344

SQ SEQUENCE 388 AA; 41696 MW; 97F6E5E3F6C2A793 CRC64;

Query Match 45.5%; Score 914.5; DB 1; Length 388;

Best Local Similarity 48.4%; Pred. No. 2.1e-66;

Matches 187; Conservative 70; Mismatches 118; Indels 11; Gaps 7;

Qy 1 MKWIVLLGLVAFSECI-KIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSN-- 57

Db 1 MKWLLGLLGLVAFSECI-KIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSN-- 57

Qy 58 --LTIHPLRNLMLVYVGNITIGTPPQEFVDFVDTGSDLVWPS-FCIMPACSAVPWFQ 114

Db 61 TLIDEQPLENTLDVEYFTGIGTGAQDFTVDFGSSNLWPSVYCSLACTNHNLP 120

Qy 115 LQSTFOPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYG--LGRNYD 172

Db 121 QDSSTFOPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYG--LGRNYD 172

Qy 173 GVLGNYPNISFSGAIPFDNLKNOGAISEPVAFYLSKNKQEGSVVMFGGVVDHYKGE 232

Db 181 GILGLAYPSISSGATPVFDNWDGLYSQDLFSYLSADDSGVSIVFGGIDSSYYTGS 240

Qy 233 LNWITPLIAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLI-RT 291

Db 241 LNWVPSVEGYWQISVDSITMNGEACAEQCAIVDTGTSLLTGPTSPIANIQSDIGAS 300

Qy 292 RPFDSKHVYSCFAFKYLPSTIFINGIKYPMATRAYIFKDSRGRCYSAPKENTVRT-SRE 350

Db 301 ENSDGMVYSCSAISLDPDIFTNGVQYPLPPSAIILQ-SQGSCTSGFQGMVDVPTESG 359

Qy 351 TWILGDAFLRRYFVDFRGNDRIGLA 376

Db 360 LWILGDVFIQYFTVDFRANNOVGLA 385

RESULT 13

PEPI_RABIT

ID AC P28712; STANDARD; PRT; 387 AA.

DT 01-DEC-1992 (Rel. 24, Created)

DT 01-DEC-1992 (Rel. 24, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DE Pepsin II-1 precursor (EC 3.4.23.1) (Pepsin A).

OS Oryctolagus cuniculus (Rabbit).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.

OX NCBITaxID:9986;

RP SEQUENCE FROM N.A.

RA MEDLINE-91009127; PubMed-2129536;

RT Kageyama T., Tanabe K., Koiwai O.;

RT "Structure and development of rabbit pepsinogens. Stage-specific

RT zymogens, nucleotide sequences of cDNAs, molecular evolution, and

RT gene expression during development."

RL J. Biol. Chem. 265:17031-17038(1990).

CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS

CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE

CC ALSO CLEAVED TO SOME EXTENT.

CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably

CC aromatic, residues in Pi and Pi' positions. Cleaves 1-Phe-1-Val-2,

CC 4-Gln-1-His-5, 13-Glu-1-Ala-14, 14-Ala-1-Leu-15, 15-Leu-1-Tyr-16,

CC 16-Tyr-1-Leu-17, 23-Gly-1-Phe-24, 24-Phe-1-Phe-25 and 25-Phe-1-

CC Tyr-26 bonds in the B chain of insulin.

CC -!- DEVELOPMENTAL STAGE: PEPSINOGENS IN GROUP I, II, AND III WHERE

CC THE PREDOMINANT ZYMOGENS AT LATE POSTNATAL STAGE.

CC -!- MISCELLANEOUS: THE EXPRESSION OF PEPSINOGEN GENES IS REGULATED BY

CC HORMONES AND RELATED SUBSTANCES.

CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.

DR PIR; B38302; B38302.

DR HSSP; P00791; 1PSA.

DR MEROPS; A01.001; -

DR InterPro; IPR001461; AspproteaseA1.

DR InterPro; IPR001969; AspproteaseA1.

DR Pfam; PF00026; asp; 1.

DR PRINTS; PR00792; PEPsin.

DR PROSITE; PS00141; ASP_PROTEASE; 2.

KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;

KW Phosphorylation; Multigene family.

FT SIGNAL 1 15

FT PROPEP 16 59

FT CHAIN 60 387

FT MOD_RES 129 129

FT ACT_SITE 93 93

FT ACT_SITE 276 276

FT DISULFID 106 111

FT DISULFID 267 271

FT DISULFID 310 343

SQ SEQUENCE 387 AA; 42070 MW; A6EC48F715541A48 CRC64;

Query Match 45.5%; Score 914; DB 1; Length 387;

Best Local Similarity 47.5%; Pred. No. 2.3e-66;

Matches 184; Conservative 74; Mismatches 119; Indels 10; Gaps 7;

Qy 1 MKWIVLLGLVAFSECI-KIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISF---RGS 56

Db 1 MKWLLGLLGLVAFSECI-KIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISF---RGS 56

Qy 57 NLTIHPLRNLMLVYVGNITIGTPPQEFVDFVDTGSDLVWPS-FCIMPACSAVPWFQRL 115

Db 61 SVSTESLENVLDREYFTGISTGTPPQEFVDFVDTGSDLVWPS-FCIMPACSAVPWFQRL 120

Qy 116 QSTFOPTNKTFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLE--GRNYDG 173

Db 121 DSSTFOATSETLSITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLE--GRNYDG 180

Qy 174 VLGLNYPNISFSGAIPFDNLKNOGAISEPVAFYLSKNKQEGSVVMFGGVVDHYKGE 233

Db 181 ILGLAYPSISASDATPVFDNWDGLYSQDLFSYLSADDSGVSIVFGGIDSSYYTGS 240

Qy 234 NWITPLIAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLI-RTR 292

Db 241 NWVPSVEGYWQISVDSITMNGEACAEQCAIVDTGTSLLTGPTSPIANIQSDIGAS 300

Qy 293 RPFDSKHVYSCFAFKYLPSTIFINGIKYPMATRAYIFKDSRGRCYSAPKENTVRTS-RET 351

Db 301 NLGENIISCSAISLDPDIFTNGVQYPLPPSAIILKED-DCSLSGFDGNNLDTSYGEL 359

Qy 352 WILGDAFLRRYFVDFRGNDRIGLA 378

Db 360 WILGDVFIQYFTVDFRANNOVGLAA 386

```

RESULT 14
PEP3_RABIT STANDARD; PRT; 387 AA.
ID PEP3_RABIT
AC P27822;
DT 01-AUG-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DE Pepsin III precursor (EC 3.4.23.1) (Pepsin A).
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP MEDLINE=91009127; PubMed=2129536;
RA Kageyama T., Tanabe K., Koizumi O.;
RT "Structure and development of rabbit pepsinogens. Stage-specific
RT zymogens, nucleotide sequences of cDNAs, molecular evolution, and
RT gene expression during development."
RL J. Biol. Chem. 265:17031-17038(1990).
CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
CC ALSO CLEAVED TO SOME EXTENT.
CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
CC aromatic, residues in P1 and P1' positions. Cleaves 1-Phe-I-Val-2,
CC 4-Gln-I-His-5, 13-Glu-I-Ala-14, 14-Ala-I-Leu-15, 15-Leu-I-Tyr-16,
CC 16-Tyr-I-Leu-17, 23-Gly-I-Phe-24, 24-Phe-I-Phe-25 and 25-Phe-I-
CC Tyr-26 bonds in the B chain of insulin.
CC -!- DEVELOPMENTAL STAGE: PEPINOGENS IN GROUP I, II, AND III WHERE
CC THE PREDOMINANT ZYMOGENS AT LATE POSTNATAL STAGE.
CC -!- MISCELLANEOUS: THE EXPRESSION OF PEPINOGEN GENES IS REGULATED BY
CC HORMONES AND RELATED SUBSTANCES.
CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC -----
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CC modified and this statement is not removed. Usage by and for commercial
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; M59237; AAA85370.1; -.
DR PIR; E38302; E38302.
DR HSP; P00791; 4PEP.
DR MEROPS; A01.001; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PROSITE; PS00792; PEPsin.
DR Hydrolase; Aspartyl protease; 2.
KW Phosphorylation; Multigene family.
KW Phosphorylation; Multigene family.
FT SIGNAL 1 15
FT PROPEP 16 59 ACTIVATION PEPTIDE.
FT CHAIN 60 387 PEPsin III.
FT MOD_RES 129 129 PHOSPHORYLATION (POTENTIAL).
FT ACT_SITE 93 93 BY SIMILARITY.
FT ACT_SITE 276 276 BY SIMILARITY.
FT DISULFID 106 111 BY SIMILARITY.
FT DISULFID 267 271 BY SIMILARITY.
FT DISULFID 310 343 BY SIMILARITY.
SQ SEQUENCE 387 AA; 41969 MW; 15A59AC81F36F9E9 CRC64;

Query Match 45.5%; Score 914; DB 1; Length 387;
Best Local Similarity 47.6%; Pred. No. 2.3e-66;
Matches 185; Conservative 75; Mismatches 115; Indels 14; Gaps 8;

QY 1 MKWIVLGLVAFSECIY-KIPLRQVKTKRKVLSGKNMKNFLKEHPYRLS-----QISFR 54
Db 1 MKWLLLLGLLALSECIHKVPLVRKSKRLNLEKGLKDYIKTKHTPNLATKYLKPAAF- 59
QY 55 GSNLTIHLRIMNLVYVGNITIGTPPEQVQVFTGSSDLWVPS-FCMTPACSPAPVWER 113

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Db 60 -DSVETETLENYLDTEYFTGIGTGAQDFTVIFDTGSSNLWVPSVCSAACSVMNQFN 118
QY 114 QLOSTFQPTNKFTTYTGGSGMKGFAYDVTVRIGDLVSTQDPFGLSVVVEYG--LEGRNY 171
Db 119 PEDSSTFQATSELSITYTGTGSMGTGLGYDVTVKVGNIEDTNQIFGLSESEPGSFLYYAF 178
QY 172 DGVGLGNYPNIFSGAIPFDLNKOGAISEPVFAFYLKSKNKGESVVMFGVDHYYKYG 231
Db 179 DGILGLAYPSISSDATPVFDNNWNEGLVSEDLFSVYLSDDDESGVVMFGGIDSSYYTG 238
QY 232 ELNWIPLEIAGEWRVHMDRISMKRVYIACSGCEALVHTGTSHIEGPGRLVNNIHLI-R 290
Db 239 SLNWVPVSVEGYWQITLDSITMDGETIACADSCQAIVDTGTSLLAGPTSAISNIQYIGA 298
QY 291 TRPFDKHYVSCFATKYLPSITFIINGIKYPMTARAYIFKDSRGRCYSFAKENTVTR-SR 349
Db 299 SENSDEGMIVSCSMYSUPNIVFTINGVQVPASAIILEED-DACISGFEGMNLDITYG 357
QY 350 ETWILGDALFRYFVSFDRGNDRIGLARA 378
Db 358 ELWILGDVFIROYFTVFDNRANNQLGLAAA 386

RESULT 15
PEP4_RABIT STANDARD; PRT; 387 AA.
ID PEP4_RABIT
AC P28713;
DT 01-DEC-1992 (Rel. 24, Created)
DT 01-DEC-1992 (Rel. 24, Last sequence update)
DE Pepsin II-4 precursor (EC 3.4.23.1) (Pepsin A).
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91009127; PubMed=2129536;
RA Kageyama T., Tanabe K., Koizumi O.;
RT "Structure and development of rabbit pepsinogens. Stage-specific
RT zymogens, nucleotide sequences of cDNAs, molecular evolution, and
RT gene expression during development."
RL J. Biol. Chem. 265:17031-17038(1990).
CC -!- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
CC INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
CC ALSO CLEAVED TO SOME EXTENT.
CC -!- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
CC aromatic, residues in P1 and P1' positions. Cleaves 1-Phe-I-Val-2,
CC 4-Gln-I-His-5, 13-Glu-I-Ala-14, 14-Ala-I-Leu-15, 15-Leu-I-Tyr-16,
CC 16-Tyr-I-Leu-17, 23-Gly-I-Phe-24, 24-Phe-I-Phe-25 and 25-Phe-I-
CC Tyr-26 bonds in the B chain of insulin.
CC -!- DEVELOPMENTAL STAGE: PEPINOGENS IN GROUP I, II, AND III WHERE
CC THE PREDOMINANT ZYMOGENS AT LATE POSTNATAL STAGE.
CC -!- MISCELLANEOUS: THE EXPRESSION OF PEPINOGEN GENES IS REGULATED BY
CC HORMONES AND RELATED SUBSTANCES.
CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC PIR; D38302; D38302.
CC HSP; P00790; IPSN.
CC MEROPS; A01.001; -.
CC InterPro; IPR001461; AspproteaseA1.
CC InterPro; IPR001969; Aspprotease_site.
CC Pfam; PF00026; asp; 1.
CC PRINTS; PR00792; PEPsin.
CC PROSITE; PS00141; ASP_PROTEASE; 2.
KW Hydrolase; Aspartyl protease; Digestion; Zymogen; Signal;
KW Phosphorylation; Multigene family.
FT SIGNAL 1 15
FT PROPEP 16 59 ACTIVATION PEPTIDE.
FT CHAIN 60 387 PEPsin II-4.
FT MOD_RES 129 129 PHOSPHORYLATION (POTENTIAL).
FT ACT_SITE 93 93 BY SIMILARITY.
FT ACT_SITE 276 276 BY SIMILARITY.

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GenCore version 5.1.4.p5.4578
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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:44:45 ; Search time 87 Seconds
(Without alignments)
897.608 Million cell updates/sec

Title: US-09-273-164-32
Perfect score: 2008
Sequence: 1 MKWVLGLVAFSECVIKP.....RRYFSVDRGNDRIGLARAV 379

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

- 1: sp.archaea.*
- 2: sp.bacteria.*
- 3: sp.fungi.*
- 4: sp.human.*
- 5: sp.invertebrate.*
- 6: sp.mammal.*
- 7: sp.mhc.*
- 8: sp.organelle.*
- 9: sp.phage.*
- 10: sp.plant.*
- 11: sp.rodent.*
- 12: sp.virus.*
- 13: sp.vertebrate.*
- 14: sp.unclassified.*
- 15: sp.rvrius.*
- 16: sp.bacteriap.*
- 17: sp.archeap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	2008	100.0	379	6	O46497
2	1571.5	78.3	380	6	Q9ttv8
3	1553	77.3	378	6	Q28155
4	1532.5	76.3	380	6	Q9ttv7
5	1529.5	76.2	380	6	Q9ttv4
6	1526.5	76.0	380	6	Q9ttv9
7	1526	76.0	381	6	Q9ttv6
8	1511.5	75.3	380	6	Q9ttv3
9	1508.5	75.1	380	6	Q9ttv5
10	1484	73.9	379	6	O46494
11	1474.5	73.4	380	6	Q9ttw5
12	1474	73.4	379	6	Q9ttw6
13	1459.5	72.7	380	6	O02724
14	1450.5	72.2	380	6	O02723
15	1449.5	72.2	377	6	O46493
16	1430.5	71.2	380	6	Q9ttx2

17	1426.5	71.0	380	6	O02726
18	1424.5	70.9	380	6	Q9ttx0
19	1424.5	70.9	380	6	Q9ttx3
20	1412.5	70.3	380	6	Q9ttx1
21	1391	69.3	383	6	Q9ttw7
22	1388.5	69.1	380	6	O46492
23	1385.5	69.0	380	6	Q9ttx5
24	1375.5	68.5	380	6	O02727
25	1353.5	67.4	374	6	Q9ttw0
26	1298	64.6	341	6	O46495
27	1275.5	63.5	346	6	O02729
28	1257	62.6	379	6	O02725
29	1216	60.6	341	6	Q9ttw9
30	1188	59.2	341	6	O02728
31	1157.5	57.6	375	6	O46500
32	1151.5	57.3	370	6	Q9ttw1
33	1138.5	56.7	376	6	Q9ttx4
34	1137.5	56.6	397	6	O28546
35	1105.5	55.1	376	6	O46499
36	1086.5	54.1	380	6	O46498
37	1064	53.0	389	6	Q9MYK3
38	1061	52.8	389	6	Q9MYK2
39	1044.5	52.0	388	6	O46524
40	1001	49.9	387	6	O46496
41	990.5	49.3	388	6	O46523
42	981	48.9	387	11	Q9JJX2
43	973.5	48.5	386	6	Q9ttw8
44	949	47.3	387	11	Q9JKE6
45	946	47.1	387	11	Q9D106

ALIGNMENTS

RESULT 1

ID	O46497	PRELIMINARY;	PRT;	379	AA.
AC	O46497;				
DT	01-JUN-1998	(TREMBLrel. 06, Created)			
DT	01-JUN-1998	(TREMBLrel. 06, Last sequence update)			
DT	01-JUN-2002	(TREMBLrel. 21, Last annotation update)			
DE	Pregnancy-associated glycoprotein 9.				
GN	PAG9.				
OS	Bos taurus (Bovine).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;				
OC	Bovidae; Bovinae; Bos.				
OX	NCBI_TaxID=9913;				
RN	[1]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=PLACENTA;				
RX	MEDLINE=98058726; PubMed=9371757;				
RA	Xie S., Green J., Bixby J.B., Szafranska B., DeMartini J.C., Hecht S., Roberts R.M.;				
RT	The diversity and evolutionary relationships of the pregnancy-associated glycoproteins, an aspartic proteinase subfamily consisting of many trophoblast-expressed genes.*;				
RL	Proc. Natl. Acad. Sci. U.S.A. 94:12809-12816(1997).				
CC	-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EUKARYOTIC ASPARTYL PROTEASES FAMILY.				
DR	EMBL; AF020511; AAC04682.1; -.				
DR	HSSP; P00794; 4CMS.				
DR	MEROPS; A01.971; -.				
DR	InterPro; IPR001461; AspproteaseA1.				
DR	InterPro; IPR001969; Aspprotease_site.				
DR	Pfam; PF00026; asp; 1.				
DR	PRINTS; PR00792; PEPsin.				
DR	PROSITE; PS00141; ASP_PROTEASE; 1.				
KW	Aspartyl protease; Hydrolase.				
SQ	SEQUENCE 379 AA; 42864 MW; 914E6CF793DF4DC0 CRC64;				
Query Match					100.0%; Score 2008; DB 6; Length 379;
Best Local Similarity					100.0%; Pred. No. 1.7e-162;

Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 1 MKWIVLLGLVAFSECVIKIPLOVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWIVLLGLVAFSECVIKIPLOVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLTI 60
QY 61 HPLRNIMNLVYVGNITIGTPQEQVFDGSSDLWVPSFCTMPACSAVPWFRQLQSSTF 120
Db 61 HPLRNIMNLVYVGNITIGTPQEQVFDGSSDLWVPSFCTMPACSAVPWFRQLQSSTF 120
QY 121 OPTNKTFTITVYVGNITIGTPQEQVFDGSSDLWVPSFCTMPACSAVPWFRQLQSSTF 180
Db 121 OPTNKTFTITVYVGNITIGTPQEQVFDGSSDLWVPSFCTMPACSAVPWFRQLQSSTF 180
QY 181 NISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKKGELNWIPLIE 240
Db 181 NISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKKGELNWIPLIE 240
QY 241 AGEWRVHMDRISMRTVITACSDGCEALVHTGTSHTEGPGRLVNNIHLIRTPPDSKHV 300
Db 241 AGEWRVHMDRISMRTVITACSDGCEALVHTGTSHTEGPGRLVNNIHLIRTPPDSKHV 300
QY 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRTSRETWILGDAFLR 360
Db 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRTSRETWILGDAFLR 360
QY 361 RYFSVDFDRGNDRIGLARAV 379
Db 361 RYFSVDFDRGNDRIGLARAV 379
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RESULT 2

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Q9TTV8 ID Q9TTV8 PRELIMINARY; PRT; 380 AA.
AC Q9TTV8;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-16.
GN PAG-16.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes.";
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20297004; PubMed=10819764;
RA Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,
RA Beckers J.F., Roberts R.M.;
RT "Pregnancy-associated bovine and ovine glycoproteins exhibit spatially
RT and temporally distinct expression patterns during pregnancy.";
RL Biol. Reprod. 62:1624-1631(2000).
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE
CC EUKARYOTIC ASPARTYL PROTEASES FAMILY.
DR EMBL; AF192333; AAF05999.1; -.
DR HSSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
FT NON_TER 1
SQ SEQUENCE 378 AA; 42319 MW; CB7ED15D4A34FDIC CRC64;
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Query Match 77.3%; Score 1553; DB 6; Length 378;
Best Local Similarity 79.4%; Pred. NO. 8.1e-124;
Matches 300; Conservative 25; Mismatches 51; Indels 2; Gaps 2;
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SQ SEQUENCE 380 AA; 42605 MW; FAE2054AC092A355 CRC64;

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Query Match 78.3%; Score 1571.5; DB 6; Length 380;
Best Local Similarity 78.2%; Pred. NO. 2.2e-125;
Matches 297; Conservative 31; Mismatches 51; Indels 1; Gaps 1;
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QY 1 MKWIVLLGLVAFSECVIKIPLOVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWIVLLGLVAFSECVIKIPLOVKTMRKTLGKKNLKNFLKEHPYRLSHISFRGSNLTT 60
QY 61 HPLRNIMNLVYVGNITIGTPQEQVFDGSSDLWVPS-FCITMPACSAVPWFRQLQSST 119
Db 61 LPLNRDRLMYVGNITIGTPQEQVFDGSSDLWVPSDFCTSHVRFHFOSST 120
QY 120 FOPTNKTFTITVYVGNITIGTPQEQVFDGSSDLWVPSDFCTSHVRFHFOSST 179
Db 121 FRPTKTFRIIYVSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLSRRFDGILGNY 180
QY 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKKGELNWIPLI 239
Db 181 PNLSGSAIPIDFKLKNQGAISDPIFAFYLSKDKREGSVVMFGVDHRYKKGELNWPVLI 240
QY 240 EAGEWRVHMDRISMRTVITACSDGCEALVHTGTSHTEGPGRLVNNIHLIRTPPDSKHV 299
Db 241 RAGDWIVHVDRIITMKREVIACSDGCAALVDTGTSLIQGPGRVIRIDNIHKLIGATPRGSKHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRTSRETWILGDAFL 359
Db 301 VSCSVNTLPSITFIINGIKYPMPTARAYILKDSRGYCYTAFKEQVRVRSTESWLLGDVFL 360
QY 360 RYFSVDFDRGNDRIGLARAV 379
Db 361 RLYFSVDFDRGNDRIGLARAV 380
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RESULT 3

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Q28155 ID Q28155 PRELIMINARY; PRT; 378 AA.
AC Q28155;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-specific glycoprotein (Fragment).
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RA Roberts R.M., Xie S.;
RT "Bovine pregnancy-associated glycoprotein variant.";
RL Submitted (NOV-1992) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE
CC EUKARYOTIC ASPARTYL PROTEASES FAMILY.
DR EMBL; L06153; AAA30684.1; -.
DR HSSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
FT NON_TER 1
SQ SEQUENCE 378 AA; 42319 MW; CB7ED15D4A34FDIC CRC64;
```

```
Query Match 77.3%; Score 1553; DB 6; Length 378;
Best Local Similarity 79.4%; Pred. NO. 8.1e-124;
Matches 300; Conservative 25; Mismatches 51; Indels 2; Gaps 2;
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QY 4 IVLLGLVAFSECVIKIPLOVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLTIHPL 63

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:|||||
Db 1 LVLLGLVAFSECIKIPLRVKTMRNTVSGKNLNILKEHYRLSQISFRGSNTLTHPL 60
QY 64 RNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPS-FCIMPACSAFVWFOLOSTTQP 122
Db 61 RNKDLIYVGNITIGTPQEFQVVDGSSDFWVPSDFCTSRACSTHVRFRHLQSTFRL 120
QY 123 TNKFTTYTIGSGSKMGFLAYDVTVRIGDLVSTDDPGLSVVEVGLGR-NYDGLVGLNYPN 181
Db 121 TNKFTTYTIGSGRKMVGVAHDTVRIGDLVSTDDPGLSVVEYGFEGRAYDVGVLNYPN 180
QY 182 ISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQQYKGLNWIPILEA 241
Db 181 ISFSGAIPFDNLKNOGAISEPVFAILLSKDEQEGSVVMFGVDHRYVEGELNWIPILEA 240
QY 242 GEWRVHMDRISMKTRTVIACSDGCEALVHTGTSHEGPGRLVNNIHLIRTRPFDKHYVS 301
Db 241 GDWIIHMDRISMKRKIIACSGSCEAIVDTGTSABEGPKLVNKHKLICARPHSKYVIS 300
QY 302 CFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTSRETWILGDAFLR 361
Db 301 CSAVNTLPSIIIFTINGINYPGCGRAYVLKDSRGRCYSFQENKVSSTETWILGDVFLRV 360
QY 362 YFSVFDGRNDRIGLARAV 379
Db 361 YFSVFDGRNDRIGLARAV 378

RESULT 4
Q9TTV7 PRELIMINARY; PRT; 380 AA.
AC Q9TTV7;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-17.
GN PAG-17.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes.";
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20297004; PubMed=10819764;
RA Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,
RA Beckers J.F., Roberts R.M.;
RT "Pregnancy-associated bovine and ovine glycoproteins exhibit spatially
RT and temporally distinct expression patterns during pregnancy.";
RL Biol. Reprod. 62:1624-1631(2000).
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE
CC EUKARYOTIC ASPARTYL PROTEASES FAMILY.
DR EMBL; AF192334; AAF06000.1; -.
DR HSSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
SQ SEQUENCE 380 AA; 42547 MW; A500FFB82CF12BF7 CRC64;
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Query Match 76.3%; Score 1532.5; DB 6; Length 380;

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Best Local Similarity 77.6%; Pred. No. 4.5e-122;
Matches 295; Conservative 25; Mismatches 59; Indels 1; Gaps 1;
QY 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGKNLKNLKEHYRLSQISFRGSNLTII 60
Db 1 MKWLVLLGLVAFSECIKIPLRQVKTMRKTLGKNLKNLKEHYRLSQISFRGSNLTII 60
QY 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPS-FCIMPACSAFVWFOLOSTT 119
Db 61 HPLRNIMDLVYVGNITIGTPQEFQVVDGSSDLWVPSVFCOSLACATKVMFTHLSST 120
QY 120 FQPTNKTFTTYTIGSGSKMGFLAYDVTVRIGDLVSTDDPGLSVVEYGLGRNYDGLVGLN 179
Db 120 FQPTNKTFTTYTIGSGSKMGFLAYDVTVRIGDLVSTDDPGLSVVEYGLGRNYDGLVGLN 179
QY 121 FQPTNKTFTTYTIGSGSKMGFLAYDVTVRIGDLVSTDDPGLSVVEYGLGRNYDGLVGLN 180
Db 121 FQPTNKTFTTYTIGSGSKMGFLAYDVTVRIGDLVSTDDPGLSVVEYGLGRNYDGLVGLN 180
QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQQYKGLNWIPI 239
Db 181 PNMSFSGAIPFDNLKNEGAISEPVFAFYLSKDKREGSVVMFGVDHRYKGLNWIPI 240
QY 240 EAGENRVHMDRISMKTRTVIACSDGCEALVHTGTSHEGPGRLVNNIHLIRTRPFDKHY 299
Db 241 OAGGWTVHVDRIISMKRKIIACSGGCEALVDTGTALIKGPRRLVNNIQLIGTTPRGSKHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTSRETWILGDAFL 359
Db 301 VSCSVVNTLPSIIIFTINGINYPVPARAYILKDSSESCYTTFTKENTVTSRETWILGDVFP 360
QY 360 RRYFSVFDGRNDRIGLARAV 379
Db 361 RLYFSVFDGRNDRIGLARAV 380

RESULT 5
Q9TTV4 PRELIMINARY; PRT; 380 AA.
AC Q9TTV4;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-20.
GN PAG-20.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes.";
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20297004; PubMed=10819764;
RA Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,
RA Beckers J.F., Roberts R.M.;
RT "Pregnancy-associated bovine and ovine glycoproteins exhibit spatially
RT and temporally distinct expression patterns during pregnancy.";
RL Biol. Reprod. 62:1624-1631(2000).
DR EMBL; AF192337; AAF06003.1; -.
DR HSSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_1.
SQ SEQUENCE 380 AA; 42565 MW; 84551EB88627A452 CRC64;
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Query Match		76.2%; Score 1529.5; DB 6; Length 380;
Best Local Similarity		76.1%; Pred. No. 8.2e-122;
Matches 289; Conservative 31; Mismatches 59; Indels 1; Gaps 1;		
QY	1	MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
DB	1	MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
QY	61	HPLRNIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACAPVWFRQLOSST 119
DB	61	LPLRNIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACAPVWFRQLOSST 120
QY	120	FQPTNKTFTITYGSGMKGFAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDGVLGLNY 179
DB	121	FLTNKTFTITYGSGMKGFAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDGVLGLNY 180
QY	180	PNISFGAIPIDNLKNOGAISEPVFAFYLSKNQKQGVVFGVDHQQYKGLNWIPLI 239
DB	181	PNISFGAIPIDNLKNOGAISEPVFAFYLSKNQKQGVVFGVDHQQYKGLNWIPLI 240
QY	240	EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPRFDKHY 299
DB	241	RAGDSVHVDRITMKEGIVGSDGTAMVDTGSSNIQGPGRVIDNIHKLIGATPRGSKHY 300
QY	300	VSCFATKYLPSITFTIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRTSRETWILGDAFL 359
DB	301	VSCSVALSPVVFITINGINYPARAYVLKDTGTCYTTFEKRVRRSTEFWILGEAFL 360
QY	360	RYFSVDFRGNDRIGLARAV 379
DB	361	RLYFSVDFRGNDRIGLARAV 380
RESULT 6		
Q9TTV9		
ID	Q9TTV9	PRELIMINARY; PRT; 380 AA.
AC	Q9TTV9;	
DT	01-MAY-2000 (TrEMBLrel. 13, Created)	
DT	01-MAY-2000 (TrEMBLrel. 13, Last sequence update)	
DT	01-JUN-2002 (TrEMBLrel. 21, Last annotation update)	
DE	Pregnancy-associated glycoprotein-15.	
GN	PAG-15.	
OS	Bos taurus (Bovine).	
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;	
OC	Bovidae; Bovinae; Bos.	
OX	NCBI_TaxID=9913;	
RN	[1]	
RP	SEQUENCE FROM N.A.	
RC	TISSUE=PLACENTA;	
RX	MEDLINE=20202633; PubMed=10723351;	
RA	Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;	
RT	"Adaptive diversification within a large family of recently	
RT	duplicate, placentally expressed genes."	
RL	Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).	
RN	[2]	
RP	SEQUENCE FROM N.A.	
RC	TISSUE=PLACENTA;	
RX	MEDLINE=20297004; PubMed=10819764;	
RA	Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,	
RA	Beckers J.F., Roberts R.M.;	
RT	"Pregnancy-associated bovine and ovine glycoproteins exhibit spatially	
RT	and temporally distinct expression patterns during pregnancy.";	
RL	Biol. Reprod. 62:1624-1631(2000).	
CC	-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE	
CC	EUKARYOTIC ASPARTYL PROTEASES FAMILY.	
DR	EMBL; AF192332; AAF05998.1; -.	
DR	HSSP; P00794; 4CMS.	
DR	MEROPS; A01.971; -.	
DR	InterPro; IPR001461; AsparticaseA1.	
DR	InterPro; IPR001969; AsparticaseA1.	
DR	Pfam; PF00026; asp; 1.	
DR	PRINTS; PR00792; PEPsin.	
Query Match		76.0%; Score 1526.5; DB 6; Length 380;
Best Local Similarity		78.2%; Pred. No. 1.5e-121;
Matches 297; Conservative 26; Mismatches 56; Indels 1; Gaps 1;		
QY	1	MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
DB	1	MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
QY	61	HPLRNIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACAPVWFRQLOSST 119
DB	61	HPURNRDLVFMGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACAPVWFRQLOSST 120
QY	120	FQPTNKTFTITYGSGMKGFAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDGVLGLNY 179
DB	121	FLTNKTFTITYGSGMKGFAYDVRIGDLVSTDPQFGLSVVEYGLEGRNDGVLGLNY 180
QY	180	PNISFGAIPIDNLKNOGAISEPVFAFYLSKNQKQGVVFGVDHQQYKGLNWIPLI 239
DB	181	PNISFGAIPIDNLKNOGAISEPVFAFYLSKNQKQGVVFGVDHQQYKGLNWIPLI 240
QY	240	EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPRFDKHY 299
DB	241	EAGDVIHMDICIMRRKRVIAACSGGCEAVDPTGVMIKGPKTLVDNIQKLIGATLGRFKHY 300
QY	300	VSCFATKYLPSITFTIINGIKYPMPTARAYIFKDSRGRCYSAFKENTVRTSRETWILGDAFL 359
DB	301	VSCSADVTLPSTFTIINGINYPARAYILKDSRGCCYSSFQETTVSPSTETWILGDVFL 360
QY	360	RYFSVDFRGNDRIGLARAV 379
DB	361	RLYFSVDFRGNDRIGLARAV 380
RESULT 7		
Q9TTV6		
ID	Q9TTV6	PRELIMINARY; PRT; 381 AA.
AC	Q9TTV6;	
DT	01-MAY-2000 (TrEMBLrel. 13, Created)	
DT	01-MAY-2000 (TrEMBLrel. 13, Last sequence update)	
DT	01-JUN-2002 (TrEMBLrel. 21, Last annotation update)	
DE	Pregnancy-associated glycoprotein-18.	
GN	PAG-18.	
OS	Bos taurus (Bovine).	
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;	
OC	Bovidae; Bovinae; Bos.	
OX	NCBI_TaxID=9913;	
RN	[1]	
RP	SEQUENCE FROM N.A.	
RC	TISSUE=PLACENTA;	
RX	MEDLINE=20202633; PubMed=10723351;	
RA	Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;	
RT	"Adaptive diversification within a large family of recently	
RT	duplicate, placentally expressed genes."	
RL	Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).	
RN	[2]	
RP	SEQUENCE FROM N.A.	
RC	TISSUE=PLACENTA;	
RX	MEDLINE=20297004; PubMed=10819764;	
RA	Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,	
RA	Beckers J.F., Roberts R.M.;	
RT	"Pregnancy-associated bovine and ovine glycoproteins exhibit spatially	
RT	and temporally distinct expression patterns during pregnancy.";	
RL	Biol. Reprod. 62:1624-1631(2000).	
CC	-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE	
CC	EUKARYOTIC ASPARTYL PROTEASES FAMILY.	
DR	EMBL; AF192332; AAF05998.1; -.	
DR	HSSP; P00794; 4CMS.	
DR	MEROPS; A01.971; -.	
DR	InterPro; IPR001461; AsparticaseA1.	
DR	InterPro; IPR001969; AsparticaseA1.	
DR	Pfam; PF00026; asp; 1.	
DR	PRINTS; PR00792; PEPsin.	

DR InterPro: IPR001461; AspproteaseA1.
DR InterPro: IPR001969; Aspprotease_site.
DR Pfam: PF00026; asp; 1.
DR PRINTS: PR00792; PEPSIN.
DR PROSITE: PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
SQ SEQUENCE 381 AA; 42598 MW; 234186A04F5A8A6 CRC64;

Query Match 76.0%; Score 1526; DB 6; Length 381;
Best Local Similarity 76.9%; Pred. No. 1.6e-121;
Matches 293; Conservative 30; Mismatches 56; Indels 2; Gaps 2;

QY 1 MKWVLLGLVAFSECIYKIPLRQVKTMRKTLGKKNLNFKEHYPYRLSQISFRGSNLT 60
DB 1 MKWVLLGLVAFSECIYKIPLRQVKTMRKTLGKKNLNFKEHAYRLSQISGCSNLT 60
QY 61 HPLRNIMLVVGNITIGTPQEQVVDGSSDLWVPS-FCTMPACAPWFRQLQSS 119
DB 61 HPLRNIMLVVGNITIGTPQEQVVDGSSDLWVPS-FCTMPACAPWFRHFDSS 120
QY 120 FQPTNKTFITYGSGMKGLAYDVRIGDLVSTDPFGLSVVEYGLGRNVDGVLGLNY 179
DB 121 FRPTNKTFITYGSGMKGLAYDVRIGDLVSTDPFGLSVVEYGLGRNVDGVLGLNY 180
QY 180 PNISFGAIPFDNLKNGCALSEPVFAFYLSKNKQEGSVWFGVDHYKYGELNWIPLI 239
DB 181 PKLSFGAIPFDNLKNGCALSEPVFAFYLSKNKQEGSVWFGVDHYKYGELNWIPLI 240
QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGRLVNNIHLIRTPFDSKH 299
DB 241 QAGDSVHMDISMKRTVIACSGCKAVVDGTSLIEGRLVNNIHLIRTPFDSKH 300
QY 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSGRGRCYSAFKENTVR-TSRETWILGDAF 358
DB 301 VVCSAVNTLPPIETIKGINYPVPAQAYILKDSRGHCYTTFKEDRLSPSTETWILGDVF 360
QY 359 LRRYFSVFDRCNDRIGLARAV 379
DB 361 LRRYFSVFDRCNDRIGLARAV 381

RESULT 8
Q9TTV3 AC Q9TTV3 PRELIMINARY; PRT; 380 AA.
ID Q9TTV3
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-21.
GN PAG-21.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes."
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20297004; PubMed=10819764;
RA Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,
RA Beckers J.F., Roberts R.M.;
RT "Pregnancy-associated bovine and ovine glycoproteins exhibit spatially
RT and temporally distinct expression patterns during pregnancy."
RL Biol. Reprod. 62:1624-1631(2000).
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE

CC EUKARYOTIC ASPARTYL PROTEASES FAMILY.
DR EMBL: AF192338; AAF06004.1; -.
DR HSSP: P00794; 4CMS.
DR MEROPS: A01.971; -.
DR InterPro: IPR001461; AspproteaseA1.
DR InterPro: IPR001969; Aspprotease_site.
DR Pfam: PF00026; asp; 1.
DR PRINTS: PR00792; PEPSIN.
DR PROSITE: PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
SQ SEQUENCE 380 AA; 42564 MW; B34843B84BE9E936 CRC64;

Query Match 75.3%; Score 1511.5; DB 6; Length 380;
Best Local Similarity 76.6%; Pred. No. 2.8e-120;
Matches 291; Conservative 30; Mismatches 58; Indels 1; Gaps 1;

QY 1 MKWVLLGLVAFSECIYKIPLRQVKTMRKTLGKKNLNFKEHYPYRLSQISFRGSNLT 60
DB 1 MKWVLLGLVAFSECIYKIPLRQVKTMRKTLGKKNLNFKEHGNRLSKISFRGSNLT 60
QY 61 HPLRNIMLVVGNITIGTPQEQVVDGSSDLWVPS-FCTMPACAPWFRQLQSS 119
DB 61 LPLRNIEDLMYVGNITIGTPQEQVVDGSSDLWVPS-FCTMPACAPWFRQLQSS 120
QY 120 FQPTNKTFITYGSGMKGLAYDVRIGDLVSTDPFGLSVVEYGLGRNVDGVLGLNY 179
DB 121 FRPTNKTFITYGSGMKGLAYDVRIGDLVSTDPFGLSVVEYGLGRNVDGVLGLNY 180
QY 180 PNISFGAIPFDNLKNGCALSEPVFAFYLSKNKQEGSVWFGVDHYKYGELNWIPLI 239
DB 181 PDESFGAIPFDNLKNGCALSEPVFAFYLSKNKQEGSVWFGVDHYKYGELNWIPLI 240
QY 240 EAGWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGRLVNNIHLIRTPFDSKH 299
DB 241 ESDGSRVMDGISMKRTVIACSDGCEAVVDGTSLIKGRLVNNIHLIRTPFDSKH 300
QY 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSGRGRCYSAFKENTVR-TSRETWILGDAF 359
DB 301 VVCSAVNTLPPIETIKGINYPVPAQAYILKDSRGRCYTAFAKQRFSSSTETWILGDAF 360
QY 360 RYFVSFVFDRCNDRIGLARAV 379
DB 361 RYFVSFVFDRCNDRIGLARAV 380

RESULT 9
Q9TTV5 AC Q9TTV5 PRELIMINARY; PRT; 380 AA.
ID Q9TTV5
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-19.
GN PAG-19.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes."
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=20297004; PubMed=10819764;
RA Green J.A., Xie S., Quan X., Bao B., Gan X., Mathialagan N.,
RA Beckers J.F., Roberts R.M.;

"Pregnancy-associated bovine and ovine glycoproteins exhibit spatially and temporally distinct expression patterns during pregnancy.";
 Biol. Reprod. 62:1624-1631(2000).
 EMBL: AF192336; AAF06002.1; -.
 HSP; P00794; 4CMS.
 MEROPS; A01.971; -.
 InterPro; IPR001461; AspproteaseA1.
 Pfam; PF00026; asp; 1.
 PRINTS; PR00792; PEPSIN.
 PROSITE; PS00141; ASP_PROTEASE; 2.
 KW Aspartyl protease; Hydrolase.
 SQ SEQUENCE 380 AA; 42649 MW; 8AF53F618CA13CDB CRC64;

Query Match 75.1%; Score 1508.5; DB 6; Length 380;
 Best Local Similarity 75.8%; Pred. No. 5e-120;
 Matches 288; Conservative 33; Mismatches 58; Indels 1; Gaps 1;

QY 1 MKWIVLGLVAFSECIKIPRLQVKTMRKTLGKNNLKNFLKEHPYRLSQISFRGSLNTI 60
 DB 1 MKWLVLLGLVAFSECIKIPRLRRVKTMRNAISGKNTLNILKEHAYRLQPSFRGSLNTI 59
 QY 61 HPLRNIMNLVYVGNITIGTPPOEQVFVDTGSSDLWVPS-FCTMPACSAVWFRQLQST 119
 DB 61 HPLRNIMNLVYVGNITIGTPPOEQVFVDTGSSDLWVPS-FCTMPACSAVWFRQLQST 119
 QY 120 FQPTNKFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 DB 120 FQPTNKFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 QY 180 PNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 DB 180 PNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 QY 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPPDSKH 299
 DB 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPPDSKH 299
 QY 300 VSCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGRCYSAFKENTVTSRETWILGDAFL 359
 DB 300 VSCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGRCYSAFKENTVTSRETWILGDAFL 359
 QY 360 RRYFSVDFDRGNDRIGLARAV 379
 DB 360 RRYFSVDFDRGNDRIGLARAV 380

RESULT 10
 O46494
 ID O46494 PRELIMINARY; PRT; 379 AA.
 AC O46494
 DT 01-JUN-1998 (TrEMBLrel. 06, Created)
 DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Pregnancy-associated glycoprotein 6.
 GN PAG6.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=98058726; PubMed=9371757;
 RC TISSUE=PLACENTA;
 RX Xie S., Green J., Bixby J.B., Szafranska B., DeMartini J.C., Hecht S.,
 RA Roberts R.M.;
 RT "The diversity and evolutionary relationships of the pregnancy-associated glycoproteins, an aspartic proteinase subfamily consisting of many trophoblast-expressed genes";
 RL Proc. Natl. Acad. Sci. U.S.A. 94:12809-12816(1997).
 CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EUKARYOTIC ASPARTYL PROTEASES FAMILY.
 CC EMBL; AF020508; AAC04679.1; -.
 DR HSP; P00794; 4CMS.
 DR MEROPS; A01.971; -.
 DR

DR InterPro; IPR001461; AspproteaseA1.
 DR InterPro; IPR001969; Aspprotease_site.
 DR Pfam; PF00026; asp; 1.
 DR PRINTS; PR00792; PEPSIN.
 DR PROSITE; PS00141; ASP_PROTEASE; 2.
 KW Aspartyl protease; Hydrolase.
 SQ SEQUENCE 379 AA; 42695 MW; 0B02FA084ECDA8C8 CRC64;

Query Match 73.9%; Score 1484; DB 6; Length 379;
 Best Local Similarity 74.7%; Pred. No. 6e-118;
 Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;

QY 1 MKWIVLGLVAFSECIKIPRLQVKTMRKTLGKNNLKNFLKEHPYRLSQISFRGSLNTI 60
 DB 1 MKWLVLLGLVAFSECIKIPRLRRVKTMRNAISGKNTLNILKEHAYRLQPSFRGSLNTI 59
 QY 61 HPLRNIMNLVYVGNITIGTPPOEQVFVDTGSSDLWVPS-FCTMPACSAVWFRQLQST 119
 DB 61 HPLRNIMNLVYVGNITIGTPPOEQVFVDTGSSDLWVPS-FCTMPACSAVWFRQLQST 119
 QY 120 FQPTNKFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 DB 120 FQPTNKFTITYGSGMKGLAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGVGLNY 179
 QY 180 PNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 DB 180 PNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQEGSVVMFGVDHGYKGLNWIPLI 239
 QY 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPPDSKH 299
 DB 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTPPDSKH 299
 QY 300 VSCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGRCYSAFKENTVTSRETWILGDAFL 359
 DB 300 VSCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGRCYSAFKENTVTSRETWILGDAFL 359
 QY 360 RRYFSVDFDRGNDRIGLARAV 379
 DB 360 RRYFSVDFDRGNDRIGLARAV 379

RESULT 11
 Q9TTW5
 ID Q9TTW5 PRELIMINARY; PRT; 380 AA.
 AC Q9TTW5
 DT 01-MAY-2000 (TrEMBLrel. 13, Created)
 DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Pregnancy-associated glycoprotein-11.
 GN PAG-11.
 OS Capra hircus (Goat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
 OC Bovidae; Caprinae; Capra.
 OX NCBI_TaxID=9925;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=2020633; PubMed=10725351;
 RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
 RT "Adaptive diversification within a large family of recently duplicated, placentally expressed genes";
 RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=20519101; PubMed=11066059;
 RA Garbayo J.M., Green J.A., Manikkam M., Beckers J.F., Kiesling D.O.,
 RA Ealy A.D., Roberts R.M.;
 RT "Caprine pregnancy-associated glycoproteins (PAG): their cloning, expression, and evolutionary relationship to other PAG";
 RL Mol. Reprod. Dev. 57:311-322(2000).
 CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EUKARYOTIC ASPARTYL PROTEASES FAMILY.
 CC EMBL; AF191336; AAF05750.1; -.
 DR

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DR HSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro: IPR001461; AsparticaseA1.
DR InterPro: IPR001969; Asparticase_site.
DR Pfam: PF00026; asp; 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
SQ SEQUENCE 380 AA; 42514 MW; 437C4EEBFF98D905 CRC64;

Query Match 73.4%; Score 1474.5; DB 6; Length 380;
Best Local Similarity 73.4%; Pred. No. 3.9e-117;
Matches 280; Conservative 39; Mismatches 60; Indels 1; Gaps 1;

QY 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSLTI 60
DB 1 MKWLVLLGLVSVSECIKIPRLRRVKTMRKTLSEKNMLNLPFKHAYRLSQISFRGSLTI 60
QY 61 HPLRNIMNLVYVGNITIGTPPQEFQVVDGSSDLWVPS-FCTMPACSAVPWFRQLQST 119
DB 61 HPLRNIMNLVYVGNITIGTPPQEFQVVDGSSDLWVPS-FCVCAQACSIHARFRLQST 120
QY 120 FQPTNKTFTITYGSGMKGLAYDTRVIGDLVSTQDPFGLSVVEYGLEGRNDYGLNLY 179
DB 120 FQPTNKTFTITYGSGMKGLAYDTRVIGDLVSTQDPFGLSVVEYGLEGRNDYGLNLY 180
QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 239
DB 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 240
QY 240 EAGEWRVHMDRISKRVIVACSDGCEALVHTGSHIEGPRGLVNNIHLIRTRPFDKSHY 299
DB 240 EAGEWRVHMDRISKRVIVACSDGCEALVHTGSHIEGPRGLVNNIHLIRTRPFDKSHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
DB 300 VSCFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 360
QY 360 RYFESVFDGRNDRIGLARAV 379
DB 360 RYFESVFDGRNDRIGLARAV 380

RESULT 12
Q9TTW6 PRELIMINARY; PRT; 379 AA.
ID Q9TTW6 AC Q9TTW6;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein-10.
GN Capra hircus (Goat).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20202633; PubMed=10725351;
RA Hughes A.L., Green J.A., Garbayo J.M., Roberts R.M.;
RT "Adaptive diversification within a large family of recently
RT duplicated, placentally expressed genes."
RL Proc. Natl. Acad. Sci. U.S.A. 97:3319-3323(2000).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=20519101; PubMed=11066059;
RA Garbayo J.M., Green J.A., Manikam M., Beckers J.F., Kiesling D.O.,
RA Ealy A.D., Roberts R.M.;
RT "Caprine pregnancy-associated glycoproteins (PAG): their cloning,
RT expression, and evolutionary relationship to other PAG."
RL Mol. Reprod. Dev. 57:311-322(2000).
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE
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CC EUKARYOTIC ASPARTYL PROTEASES FAMILY.
DR EMBL; AF191335; AAF05749.1; -.
DR HSP; P00797; 2REN.
DR MEROPS; A01.971; -.
DR InterPro: IPR001461; AsparticaseA1.
DR InterPro: IPR001969; Asparticase_site.
DR Pfam: PF00026; asp; 1.
DR PRINTS; PR00792; PEPsin.
DR PROSITE; PS00141; ASP_PROTEASE; 2.
KW Aspartyl protease; Hydrolase.
SQ SEQUENCE 379 AA; 42282 MW; 152D6AFFA8E9C086 CRC64;

Query Match 73.4%; Score 1474; DB 6; Length 379;
Best Local Similarity 73.4%; Pred. No. 4.3e-117;
Matches 279; Conservative 42; Mismatches 57; Indels 2; Gaps 2;

QY 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSLTI 60
DB 1 MKWLVLLGLVAFSECIKIPRLRRVKTMRKTNPKSKNMNMFLEHAYRLSQISFRGSLTI- 59
QY 61 HPLRNIMNLVYVGNITIGTPPQEFQVVDGSSDLWVP-SFCTMPACSAVPWFRQLQST 119
DB 61 HPLRNIMNLVYVGNITIGTPPQEFQVVDGSSDLWVP-SFCTMPACSAVPWFRQLQST 119
QY 120 FQPTNKTFTITYGSGMKGLAYDTRVIGDLVSTQDPFGLSVVEYGLEGRNDYGLNLY 179
DB 120 FQPTNKTFTITYGSGMKGLAYDTRVIGDLVSTQDPFGLSVVEYGLEGRNDYGLNLY 179
QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 239
DB 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 239
QY 240 EAGEWRVHMDRISKRVIVACSDGCEALVHTGSHIEGPRGLVNNIHLIRTRPFDKSHY 299
DB 240 EAGEWRVHMDRISKRVIVACSDGCEALVHTGSHIEGPRGLVNNIHLIRTRPFDKSHY 299
QY 300 VSCFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
DB 300 VSCFATKYLPSITFIINGIKYPMATARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
QY 360 RYFESVFDGRNDRIGLARAV 379
DB 360 RYFESVFDGRNDRIGLARAV 379

RESULT 13
O02724 PRELIMINARY; PRT; 380 AA.
ID O02724 AC O02724;
DT 01-JUL-1997 (TrEMBLrel. 04, Created)
DT 01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein 4.
GN Ovis aries (Sheep).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=PLACENTA;
RX MEDLINE=92052247; PubMed=1946444;
RA Xie S., Low B.G., Nagel R.J., Kramer K.K., Anthony R.V., Zoli A.P.,
RA Beckers J.F., Roberts R.M.;
RT "Identification of the major pregnancy-specific antigens of cattle and
RT sheep as inactive members of the aspartic proteinase family."
RL Proc. Natl. Acad. Sci. U.S.A. 88:10247-10251(1991).
RN [2]
RP SEQUENCE FROM N.A.
RX TISSUE=PLACENTA;
RA Xie S., Green J., Valdez K., Roberts R.M.;
RL Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; U94790; AAB53225.1; -.

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DR HSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_2.
SQ SEQUENCE 380 AA; 42762 MW; D58242542B624283 CRC64;

Query Match 72.7%; Score 1459.5; DB 6; Length 380;
Best Local Similarity 72.6%; Pred. No. 7.3e-116;
Matches 276; Conservative 37; Mismatches 66; Indels 1; Gaps 1;

QY 1 MKWVLLGLVAFSEICVPIPLROVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSLNLT 60
Db 1 MKWVLLGLVAFSEICVPIPLROVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSLNLT 60
QY 61 HPLRNMIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACSPVWFRQLQST 119
Db 61 HPLRNMIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACSPVWFRQLQST 120
QY 120 FQPTNKTFITYGSGMKGFAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGLVGLNY 179
Db 120 FQPTNKTFITYGSGMKGFAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGLVGLNY 179
QY 121 FRLANKTFGIMYGAGKMGVVDVTRIGDLVSTDPFGLSVVESGEHFRQFDGVLGLNY 180
Db 121 FRLANKTFGIMYGAGKMGVVDVTRIGDLVSTDPFGLSVVESGEHFRQFDGVLGLNY 180
QY 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHGYKGLNWIPLI 239
Db 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHGYKGLNWIPLI 239
QY 181 PRQSCRRPTPIFDLKNQGAISEPVFAFYLSKDEQSGVWFGVDHGYKGLNWIPLV 240
Db 181 PRQSCRRPTPIFDLKNQGAISEPVFAFYLSKDEQSGVWFGVDHGYKGLNWIPLV 240
QY 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPFDSKHY 299
Db 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPFDSKHY 299
QY 241 KADWTIQVDRISMREVIAACSGDGLDVTGASFIHGPGRLIDDIQKLGSEPRDLKHY 300
Db 241 KADWTIQVDRISMREVIAACSGDGLDVTGASFIHGPGRLIDDIQKLGSEPRDLKHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSRGRCSYSAFKNVTYRSTRWILGDAPL 359
Db 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSRGRCSYSAFKNVTYRSTRWILGDAPL 359
QY 301 ICSAVNTLPISITFIINGINYPVPAQAYILKGTGHCYTAFAKRVRTSTESWVLGDVFL 360
Db 301 ICSAVNTLPISITFIINGINYPVPAQAYILKGTGHCYTAFAKRVRTSTESWVLGDVFL 360
QY 360 RRYFSVDFRGNDRIGLARAV 379
Db 360 RRYFSVDFRGNDRIGLARAV 380
QY 361 RLYFSVDFRGNDRIGLAPAM 380
Db 361 RLYFSVDFRGNDRIGLAPAM 380

RESULT 14
O02723 PRELIMINARY; PRT; 380 AA.
AC O02723
DT 01-JUL-1997 (TrEMBLrel. 04, Created)
DT 01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein 3.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=92052247; PubMed=1946444;
RA Xie S., Low B.G., Nagel R.J., Kramer K.K., Anthony R.V., Zoli A.P.,
RA Beckers J.F., Roberts R.M.;
RT "Identification of the major pregnancy-specific antigens of cattle and
RT sheep as inactive members of the aspartic proteinase family.";
RL Proc. Natl. Acad. Sci. U.S.A. 88:10247-10251(1991).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX Xie S., Green J., Valdez K., Roberts R.M.;
RL Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; U94789; AAB53224.1; -.
DR HSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.

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DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_1.
SQ SEQUENCE 380 AA; 42498 MW; 5E6009E7B1F0AFF6 CRC64;

Query Match 72.2%; Score 1450.5; DB 6; Length 380;
Best Local Similarity 72.3%; Pred. No. 4.3e-115;
Matches 274; Conservative 38; Mismatches 66; Indels 1; Gaps 1;

QY 1 MKWVLLGLVAFSEICVPIPLROVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSLNLT 60
Db 1 MKWVLLGLVAFSEICVPIPLROVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSLNLT 60
QY 61 HPLRNMIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACSPVWFRQLQST 119
Db 61 HPLRNMIMLVVGNITIGTPPOEFQVVDGSSDLWVPS-FCMPACSPVWFRQLQST 120
QY 120 FQPTNKTFITYGSGMKGFAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGLVGLNY 179
Db 120 FQPTNKTFITYGSGMKGFAYDVTVRIGDLVSTDPFGLSVVEYGLEGRNYDGLVGLNY 179
QY 121 FRLANKTFGIMYGAGKMGVVDVTRIGDLVSTDPFGLSVVESGEHFRQFDGVLGLNY 180
Db 121 FRLANKTFGIMYGAGKMGVVDVTRIGDLVSTDPFGLSVVESGEHFRQFDGVLGLNY 180
QY 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHGYKGLNWIPLI 239
Db 180 PNISFSGAIPIDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHGYKGLNWIPLI 239
QY 181 PNLSFSKTIPIFDLKNQGAISEPVFAFYLSKDEQSGVWFGVDHGYKGLNWIPLV 240
Db 181 PNLSFSKTIPIFDLKNQGAISEPVFAFYLSKDEQSGVWFGVDHGYKGLNWIPLV 240
QY 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPFDSKHY 299
Db 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPFDSKHY 299
QY 241 KAGDWSRVDSITMKREVIAACSGDGLDVTGSSHIQGGRLIDNVQKLGITMPQSGMHY 300
Db 241 KAGDWSRVDSITMKREVIAACSGDGLDVTGSSHIQGGRLIDNVQKLGITMPQSGMHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSRGRCSYSAFKNVTYRSTRWILGDAPL 359
Db 300 VSCFATKYLPSITFIINGIKYPMARAYIFKDSRGRCSYSAFKNVTYRSTRWILGDAPL 359
QY 301 VPCSAVNTLPISITFIINGINYPVPAQAYILKGTGHCYTAFAKRVRTSTESWVLGDVFL 360
Db 301 VPCSAVNTLPISITFIINGINYPVPAQAYILKGTGHCYTAFAKRVRTSTESWVLGDVFL 360
QY 360 RRYFSVDFRGNDRIGLARAV 378
Db 360 RRYFSVDFRGNDRIGLARAV 379
QY 361 RLYFSVDFRGNDRIGLARAV 379
Db 361 RLYFSVDFRGNDRIGLARAV 379

RESULT 15
O04693 PRELIMINARY; PRT; 377 AA.
AC O04693
DT 01-JUN-1998 (TrEMBLrel. 06, Created)
DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
DE Pregnancy-associated glycoprotein 5.
GN PAG5.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=98058726; PubMed=9371757;
RA Xie S., Green J., Bixby J.B., Szafranska B., DeMartini J.C., Hecht S.,
RA Roberts R.M.;
RT "The diversity and evolutionary relationships of the pregnancy-
RT associated glycoproteins, an aspartic proteinase subfamily consisting
RT of many trophoblast-expressed genes.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:12809-12816(1997).
DR EMBL; AF020507; AAC04678.1; -.
DR HSP; P00794; 4CMS.
DR MEROPS; A01.971; -.
DR InterPro; IPR001461; AspproteaseA1.
DR InterPro; IPR001969; Aspprotease_site.
DR Pfam; PF00026; asp; 1.
DR PRINTS; PR00792; PEPSIN.
DR PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_1.
SQ SEQUENCE 377 AA; 42000 MW; 3647FD5BFF79B4E CRC64;

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Query Match		72.2%;	Score 1449.5;	DB 6;	Length 377;
Best Local Similarity		75.1%;	Pred. No. 5.le-115;		
Matches 284;		Conservative 25;	Mismatches 66;	Indels 3;	Gaps 2;
Qy	1	MKWLVLLGLVAFSECIYKPIRQVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLT	60		
Db	1	MKWLVLLGLLTSSECIYVLPKTKYKTKMRKTLSEKNMLNFKLKEQAYRLSQISSRGSN	60		
Qy	61	HPLRNIMNLVYVGNITIGTPQEFQVVDGTGSSDLWVPS-FCTMPACSA	119		
Db	61	HPLRNIMNLVYVGNITIGTPQEFQVVDGTGSSDLWVPS-FCTMPACSA	120		
Qy	120	FQPTNKFTTYTSGSMKGFAYDTRIGDLVSTDPFGLSVVEYGLEGRNYDGV	179		
Db	121	SGLTQKTFSTYSGSTKGFAYDTRIGDLVSTDPFGLSVVEYGLEGRNYDGV	180		
Qy	180	PNISFGAIPIDNLKNQGAISEPVAFYLSKNKOEGSVVMFGVDHGYK	239		
Db	181	PDMSFITTIPIFDNLKNQGAISEPVAFYLSKNKOEGSVVMFGVDHGYK	238		
Qy	240	EAGEWRVHMDRISMKRVVIACSDGEALVHTGTSHIEGPGRLVNNIHL	299		
Db	239	QAGEWSLHMDRISMKRVVIACSDGEALVHTGTSHIEGPGRLVNNIHL	298		
Qy	300	VSCFATKYLPSITFTINGIKYPTARAYIFKDSRGRCSAPKENTVTS	359		
Db	299	ISCFAVISLPSIIFTINGINIPVPARAYIHKDSRGRCHCYPTKENTV	358		
Qy	360	RYFSVDFDRGNDRIGLAR	377		
Db	359	RLYFSVDFDRGNDRIGLAQ	376		

Search completed: April 2, 2003, 17:50:11
Job time : 89 secs

Db 9 LVLELGEAQSGLHRVPLRRHPSLKKLRARSQSEFWKSH--NLDMIQFTESCSMDQSA 66
Qy 60 IHLRNLMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRQLQSS 118
Db 67 KEPLINLDMVEYFGTISGSPQNFVTFDGTSSNLWVPSVYCTSPACKTHSRFPQSQS 126
Qy 119 TFQPTNKTFTITYGSGMKGFAYDVRIGDLVSTDPFGLSVVEYG--LEGRNYDGVLG 176
Db 127 TYSQPGSFSIQYGTGSLGIAGDQVSVBGLTVVGQFGESVTEPGQTFVDAEFDGILG 186
Qy 177 LNYPNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQ--EGSVVMFGVDHYYKGLN 234
Db 187 LCYPSLAVGGVTPFDNMAQNLVDFPMSVYMSNPPGGAGSELIFGQYDHSFSSGLN 246
Qy 235 WPILEAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTRPF 294
Db 247 WVPVTKQAYWQIALDNIQVGTVMFCSEGCQAIQVDTGSLITGSDKIKOLQNAIGAAPV 306
Qy 295 DSKHYVSCFATKYLPSITFTIINGIKYPMPTARAYI---FKDSRGRCYSAPKENTVR--TSRE 350
Db 307 DGEYAVECANLNVMPDVTFTINGVPYTLSPATYLLDFVDMQFCSSGFGQLDIHPPAGP 366
Qy 351 TWILGDAFLRRVSVFDRGNDRIGLARAV 379
Db 367 LWILGDVFIROFYSVFDGRNRRVGLAPAV 395

RESULT 2

US-09-032-523-9
; Sequence 9, Application US/09032523
; Patent No. 6232454
; GENERAL INFORMATION:
; APPLICANT: Bandman, Olga
; APPLICANT: Hillman, Jennifer L.
; APPLICANT: Corley, Neil C.
; APPLICANT: Guegler, Karl
; APPLICANT: Baugh, Mariah
; TITLE OF INVENTION: HUMAN PROTEINASE MOLECULES
; NUMBER OF SEQUENCES: 9
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Incyte Pharmaceuticals, Inc.
; STREET: 3174 Porter Drive
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSEQ for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/032,523
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Billings, Lucy J
; REGISTRATION NUMBER: 36,749
; REFERENCE/DOCKET NUMBER: PF-0479 US
; TELEPHONE: 650-855-0555
; TELEFAX: 650-845-4166
; TELEX:
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 396 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; IMMEDIATE SOURCE:

; LIBRARY: Genbank
; CLONE: 181994
; US-09-032-523-9
Query Match 38.5%; Score 772.5; DB 4; Length 396;
Best Local Similarity 39.8%; Pred. No. 7.2e-75;
Matches 155; Conservative 72; Mismatches 147; Indels 15; Gaps 7;
Qy 4 IVLLGLVAFSECIKIPLRQVTKMRKTLGKNNLKNFLKEHPYRLSISFRGS----NLT 59
Db 9 LVLELGEAQSGLHRVPLRRHPSLKKLRARSQSEFWKSH--NLDMIQFTESCSMDQSA 66
Qy 60 IHLRNLMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRQLQSS 118
Db 67 KEPLINLDMVEYFGTISGSPQNFVTFDGTSSNLWVPSVYCTSPACKTHSRFPQSQS 126
Qy 119 TFQPTNKTFTITYGSGMKGFAYDVRIGDLVSTDPFGLSVVEYG--LEGRNYDGVLG 176
Db 127 TYSQPGSFSIQYGTGSLGIAGDQVSVBGLTVVGQFGESVTEPGQTFVDAEFDGILG 186
Qy 177 LNYPNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQ--EGSVVMFGVDHYYKGLN 234
Db 187 LCYPSLAVGGVTPFDNMAQNLVDFPMSVYMSNPPGGAGSELIFGQYDHSFSSGLN 246
Qy 235 WPILEAGEWRVHMDRISMKRTVIACSDGCEALVHTGSHIEGPGRLVNNIHLIRTRPF 294
Db 247 WVPVTKQAYWQIALDNIQVGTVMFCSEGCQAIQVDTGSLITGSDKIKOLQNAIGAAPV 306
Qy 295 DSKHYVSCFATKYLPSITFTIINGIKYPMPTARAYI---FKDSRGRCYSAPKENTVR--TSRE 350
Db 307 DGEYAVECANLNVMPDVTFTINGVPYTLSPATYLLDFVDMQFCSSGFGQLDIHPPAGP 366
Qy 351 TWILGDAFLRRVSVFDRGNDRIGLARAV 379
Db 367 LWILGDVFIROFYSVFDGRNRRVGLAPAV 395
RESULT 3
US-08-915-095A-13
; Sequence 13, Application US/08915095A
; Patent No. 6383793
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PE107D4
; CURRENT APPLICATION NUMBER: US/08/915,095A
; CURRENT FILING DATE: 1997-08-20
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 396
; TYPE: PRT
; ORGANISM: Homo sapiens
; US-08-915-095A-13
Query Match 38.5%; Score 772.5; DB 4; Length 396;
Best Local Similarity 39.8%; Pred. No. 7.2e-75;
Matches 155; Conservative 72; Mismatches 147; Indels 15; Gaps 7;
Qy 4 IVLLGLVAFSECIKIPLRQVTKMRKTLGKNNLKNFLKEHPYRLSISFRGS----NLT 59
Db 9 LVLELGEAQSGLHRVPLRRHPSLKKLRARSQSEFWKSH--NLDMIQFTESCSMDQSA 66
Qy 60 IHLRNLMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRQLQSS 118
Db 67 KEPLINLDMVEYFGTISGSPQNFVTFDGTSSNLWVPSVYCTSPACKTHSRFPQSQS 126
Qy 119 TFQPTNKTFTITYGSGMKGFAYDVRIGDLVSTDPFGLSVVEYG--LEGRNYDGVLG 176
Db 127 TYSQPGSFSIQYGTGSLGIAGDQVSVBGLTVVGQFGESVTEPGQTFVDAEFDGILG 186
Qy 177 LNYPNISFGAIPFDNLKNOGAISEPVFAFYLKSKNQ--EGSVVMFGVDHYYKGLN 234

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Db 187 LGYPSLAVGGVTPVFDNMMAQNLVDLPMSFVYMSNPPGGAGSELIFGGYDHSFSGSLN 246
QY 235 WIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGGRVLNNIHLIRTRPF 294
Db 247 WVPYTKQAYWQIALDNIQVGTVMFCSEGCQAIYDGTSLITGSDKIKQLQNAIGAAPV 306
QY 295 DSKHYVSCFATKYLPSITFIINGIKYPMATRAYI---FKDSRGRCYSFAKENTVR-TSRE 350
Db 307 DGEYAVECANLVNMPDVTFTINGVPYTLSPYATLLDFVDMQFCSSGFGGLDIHPPAGP 366
QY 351 TWILGDAFLRRYFSVFDGRNDRIGLARAV 379
Db 367 LWILGDVFIQFYSVFDGRNDRVGLAPAV 395

RESULT 4
US-08-798-096-13
; Sequence 13, Application US/08798096
; Patent No. 6387682
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PF107D2
; CURRENT APPLICATION NUMBER: US/08/798,096
; CURRENT FILING DATE: 1997-02-12
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 396
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-798-096-13

Query Match 38.5%; Score 772.5; DB 4; Length 396;
Best Local Similarity 39.8%; Pred. No. 7.2e-75;
Matches 155; Conservative 72; Mismatches 147; Indels 15; Gaps 7;

QY 4 IVLLGLVAFSECIIVKIPLRQVTKMKTLSGKNMLKFLKEHPYRLSQISFSGS----NLT 59
Db 9 LVLLLEGEAQGSLHRVPLRRHPSLKKLRLARSQSLSEFWKSH--NLDMIQTESCSMDQSA 66
QY 60 IHPRLNIMLVYGNITIGTPPOEQFQVVDGTSSDLWVPS-FCMPACSAAPVWFRLQSS 118
Db 67 KEPLINLDMVEYFTISGSPQNFTVIEDTGSSNLWVPSVYCTSPACKTHSRFPQSQS 126
QY 119 TFQPTNKFTITYGSGMKGFAYDVTVRIGDLVSTDQPFGLSVVEYG--LEGRNYDGVLG 176
Db 127 TYSQPGQSFSIQYGTSLGSLIIGADQVSVEGLTVVGQQFGESVTEPGQTFVDAEFDGILG 186
QY 177 LNPYNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQ--EGSVVMFGVDHGYKGLN 234
Db 187 LGYPSLAVGGVTPVFDNMMAQNLVDLPMSFVYMSNPPGGAGSELIFGGYDHSFSGSLN 246
QY 235 WIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGGRVLNNIHLIRTRPF 294
Db 247 WVPYTKQAYWQIALDNIQVGTVMFCSEGCQAIYDGTSLITGSDKIKQLQNAIGAAPV 306
QY 295 DSKHYVSCFATKYLPSITFIINGIKYPMATRAYI---FKDSRGRCYSFAKENTVR-TSRE 350
Db 307 DGEYAVECANLVNMPDVTFTINGVPYTLSPYATLLDFVDMQFCSSGFGGLDIHPPAGP 366
QY 351 TWILGDAFLRRYFSVFDGRNDRIGLARAV 379
Db 367 LWILGDVFIQFYSVFDGRNDRVGLAPAV 395

RESULT 6
US-08-846-021A-8
; Sequence 8, Application US/08846021A
; Patent No. 5948682
; GENERAL INFORMATION:
; APPLICANT: Moloney, Maurice M.
; TITLE OF INVENTION: Preparation of Heterologous Proteins on
; TITLE OF INVENTION: Oil Bodies
; NUMBER OF SEQUENCES: 31
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: BERESKIN & PARR
; STREET: 40 King Street West
; CITY: Toronto
; STATE: Ontario
; COUNTRY: Canada
; ZIP: M5H 3Y2
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/846,021A
; FILING DATE: April 25, 1997
; CLASSIFICATION: 800
; ATTORNEY/AGENT INFORMATION:
; NAME: Gravelle, Micheline
; REGISTRATION NUMBER: 40,261
; REFERENCE/DOCKET NUMBER: 9369-039
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Db 187 LGYPSLAVGGVTPVFDNMMAQNLVDLPMSFVYMSNPPGGAGSELIFGGYDHSFSGSLN 246
QY 235 WIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGGRVLNNIHLIRTRPF 294
Db 247 WVPYTKQAYWQIALDNIQVGTVMFCSEGCQAIYDGTSLITGSDKIKQLQNAIGAAPV 306
QY 295 DSKHYVSCFATKYLPSITFIINGIKYPMATRAYI---FKDSRGRCYSFAKENTVR-TSRE 350
Db 307 DGEYAVECANLVNMPDVTFTINGVPYTLSPYATLLDFVDMQFCSSGFGGLDIHPPAGP 366
QY 351 TWILGDAFLRRYFSVFDGRNDRIGLARAV 379
Db 367 LWILGDVFIQFYSVFDGRNDRVGLAPAV 395

RESULT 4
US-08-798-096-13
; Sequence 13, Application US/08798096
; Patent No. 6387682
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PF107D2
; CURRENT APPLICATION NUMBER: US/08/798,096
; CURRENT FILING DATE: 1997-02-12
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 396
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-798-096-13

Query Match 38.5%; Score 772.5; DB 4; Length 396;
Best Local Similarity 39.8%; Pred. No. 7.2e-75;
Matches 155; Conservative 72; Mismatches 147; Indels 15; Gaps 7;

QY 4 IVLLGLVAFSECIIVKIPLRQVTKMKTLSGKNMLKFLKEHPYRLSQISFSGS----NLT 59
Db 9 LVLLLEGEAQGSLHRVPLRRHPSLKKLRLARSQSLSEFWKSH--NLDMIQTESCSMDQSA 66
QY 60 IHPRLNIMLVYGNITIGTPPOEQFQVVDGTSSDLWVPS-FCMPACSAAPVWFRLQSS 118
Db 67 KEPLINLDMVEYFTISGSPQNFTVIEDTGSSNLWVPSVYCTSPACKTHSRFPQSQS 126
QY 119 TFQPTNKFTITYGSGMKGFAYDVTVRIGDLVSTDQPFGLSVVEYG--LEGRNYDGVLG 176
Db 127 TYSQPGQSFSIQYGTSLGSLIIGADQVSVEGLTVVGQQFGESVTEPGQTFVDAEFDGILG 186
QY 177 LNPYNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQ--EGSVVMFGVDHGYKGLN 234
Db 187 LGYPSLAVGGVTPVFDNMMAQNLVDLPMSFVYMSNPPGGAGSELIFGGYDHSFSGSLN 246
QY 235 WIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGGRVLNNIHLIRTRPF 294
Db 247 WVPYTKQAYWQIALDNIQVGTVMFCSEGCQAIYDGTSLITGSDKIKQLQNAIGAAPV 306
QY 295 DSKHYVSCFATKYLPSITFIINGIKYPMATRAYI---FKDSRGRCYSFAKENTVR-TSRE 350
Db 307 DGEYAVECANLVNMPDVTFTINGVPYTLSPYATLLDFVDMQFCSSGFGGLDIHPPAGP 366
QY 351 TWILGDAFLRRYFSVFDGRNDRIGLARAV 379
Db 367 LWILGDVFIQFYSVFDGRNDRVGLAPAV 395

RESULT 5
US-08-798-095A-13
; Sequence 13, Application US/08798095A
; Patent No. 6423507
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (416) 364-7311
TELEFAX: (416) 361-1398
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 427 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-846-021A-8

Query Match 36.2%; Score 726.5; DB 2; Length 427;
Best Local Similarity 39.7%; Pred. No. 7.5e-70;
Matches 146; Conservative 75; Mismatches 138; Indels 9; Gaps 6;
QY 16 IVKIPQLRVKTKLTKGKMLKFLKEHPYRLSQISFRGSLNTHPLRNIMNLVYVGN 75
DB 65 ITRIPLYKQSLRKALKKEHGLLEDFLQKQYGISSKYSFGGEVASVPLTNLYLDSQYFGKI 124
QY 76 TIGTPPQEFQVVDGSSDLWVPS-FCIMPACSAVPWFQLOSSTFQPTNKFTFTYSGS 134
DB 125 YLGTTPPQEFVLFDTGSSDFWVPSIYCKSNACKNHQRFDPKSSFTFQNLGKPLSIHYGTG 184
QY 135 SMKGFLEYDTVRIGDLVSTDPFGLSVVEYG--LEGRNYDGVGLNYPNIFSGAIPDF 192
DB 185 SNQGLIGDVTTVSNIVDIQQVGLSTQEPGDVFTYAEFDGILGMAYPSLASEYSIPVF 244
QY 193 NLKNOGAISEPVFAFYLSKNKQGVVMEFGVDHYKGLNWIPILEAGEWVHMDRTS 252
DB 245 NMNRHLVAQDLFSVYMDRNGOE-SMLTGAIDPSTYTGSLHWVPVTVQYQWFTVDSV 303
QY 253 MKRTVIACSDGCEALVHTGTHIEGPGRLVNNIHLI-RTRPFDKSHYVSCFATKYLPSI 311
DB 304 TSGVVVACGGCAILDTGTSKLVGPSSDILNIQAIGATQNOYGEFDDICDNLNLSYMP 363
QY 312 TFIINGIKYPMATARIYIFKDSRGRCYSAPKENTVTRTSRETWILGDAPFLRRYFSVDRGND 371
DB 364 VFEINGKMYPLTPSAYTSQD-QGFCSTSGFQS----ENHSQGWILGDVFIREYYSVFDRA 419
QY 372 RIGLARAV 379
DB 420 LVGLAKAI 427

RESULT 7
5217891-15
PATENT NO. 5217891
APPLICANT: BRAKE, ANTHONY J.; VAN DEN BERG, JOHAN A.
TITLE OF INVENTION: DNA CONSTRUCTS CONTAINING A KLUYVEROMYCES
A FACTOR LEADER SEQUENCE FOR DIRECTING SECRETION OF HETEROLOGOUS
POLYPEPTIDES
NUMBER OF SEQUENCES: 23
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/507,398
FILING DATE: 09-APR-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 78,551
FILING DATE: 28-JUL-1987
SEQ ID NO: 15:
LENGTH: 458
5217891-15

Query Match 35.5%; Score 712.5; DB 6; Length 458;
Best Local Similarity 39.8%; Pred. No. 2.7e-68;
Matches 147; Conservative 76; Mismatches 135; Indels 11; Gaps 8;
QY 16 IVKIPQLRVKTKLTKGKMLKFLKEHPYRLSQISFRGSLNTHPLRNIMNLVYVGN 74
DB 96 IIRIPLYKQSLRKALKKEHGLLEDFLQKQYGISSKYSFGGEVASVPLTNLYLDSQYFG- 154
QY 75 ITIGTPPQEFQVVDGSSDLWVPS-FCIMPACSAVPWFQLOSSTFQPTNKFTFTYSGS 133
DB 155 IYLTGTPPQEFVLFDTGSSDFWVPSIYCKSNACKNHQRFDPKSSFTFQNLGKPLSIHYGTG 214

QY 134 GSMKGFLEYDTVRIGDLVSTDPFGLSVVEYG--LEGRNYDGVGLNYPNIFSGAIPDF 191
DB 215 GSMQGLIGDVTTVSNIVDIQQVGLSTQEPGDVFTYAEFDGILGMAYPSLASEYSIPVF 274
QY 192 DNLKNOGAISEPVFAFYLSKNKQGVVMEFGVDHYKGLNWIPILEAGEWVHMDRI 251
DB 275 DNMNRHLVAQDLFSVYMDRNGOE-SMLTGAIDPSTYTGSLHWVPVTVQYQWFTVDSV 333
QY 252 SMKRTVIACSDGCEALVHTGTHIEGPGRLVNNIHLI-RTRPFDKSHYVSCFATKYLPS 310
DB 334 TISGVVACGGCAILDTGTSKLVGPSSDILNIQAIGATQNOYGEFDDICDNLNLSYMP 393
QY 311 ITRIPLYKPMATARIYIFKDSRGRCYSAPKENTVTRTSRETWILGDAPFLRRYFSVDRGN 370
DB 394 VFEINGKMYPLTPSAYTSQD-QGFCSTSGFQS----ENHSQGWILGDVFIREYYSVFDRA 449
QY 371 RIGLARAV 379
DB 450 NLVGLAKAI 458

RESULT 8
US-09-032-523-3
Sequence 3, Application US/09032523
Patent No. 6232454
GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Hillman, Jennifer L.
APPLICANT: Corley, Neil C.
APPLICANT: Guegler, Karl
APPLICANT: Baugh, Mariah
TITLE OF INVENTION: HUMAN PROTEINASE MOLECULES
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Drive
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeq for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/032,523
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0479 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TELEFAX: 650-845-4166
TELEX:
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 349 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: PANTCUT01
CLONE: 1515165
US-09-032-523-3

Query Match 32.0%; Score 642; DB 4; Length 349;


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; MOLECULE TYPE: PROTEIN
US-08-208-007A-12

Query Match          30.7%; Score 617; DB 1; Length 412;
Best Local Similarity 35.7%; Pred. No. 4.7e-58;
Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps

QY  4  IVLLGLVAFSECIVKIPDLROVQWTKRKTLSG-KNWLKNFLKEHYRILSQISFRGSNLTIH 62
Db   9  LALCLAAPASALVRIPLHRTSIRRTMSVGVSVEDLIAKGP--VSKYQAVPAVTEGP 66
QY  63  ---LRNIMLVVGNITICTPQEOFOVVDGTSSDLWVPSE-CTM--PACSAVPVFRQL 115
Db   67  IPEVLKYNMQAYGEIGICTPPOCFVTIVEDTSSNLWVPSIICKLLDIACTNTHHKYNSD 126
QY  116  QSSTFQPTNKTFTITYGSGMKGFLAYDVIYRI-----GDLVSTDQPFGLSVVEY 164
Db   127  KSSTYVKNGTSFDIHYGSGLSGLVSDTVSPVCQSASSASALGGVKVVERQVEGATKQP 186
QY  165  GLE--GRNYDGVGLNVPNTISFGSAIPFDNLKNQGAISEPVAFYLSK--NKQEGSVVM 220
Db   187  GITFAAKFPGIILGMAYPRISVNNVLVFPVFNLMQOKLVQDNIFSFYLSRDPDPAQPGELM 246
QY  221  FGGVDHYYKGLGNWIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHGTGSHIEGPR 280
Db   247  LGGVDSIYYKGSLSYLNWTKRKYVQHVLQDQVEVASGUTLCKECEALVDTGTSMLWGPVD 306
QY  281  LVNNIHLRLINTRP-FDSKHVYVSCFATKPLPSITFIINGIKYPMPTARAYIFKDSRG---RC 336
Db   307  EVRELQAKIAGVPLIQGEYMPICKEYVSTLPAITLKGKCYKLSPEYDTLKVSOAGKTL 366
QY  337  YSAFKENTV-RTSRETWILGDFAFLRRYFSVDFDRGNDRIGLARA 378
Db   367  LSGPMGMDIPPSGPLWILGVDFIGRYTYTVDFDRNNRVGFAEA 409

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RESULT 10
US-08-974-691-4
; Sequence 4, Application US/08974691
; Patent No. 6225103
; GENERAL INFORMATION:
; APPLICANT: Keolsch, Gerald
; APPLICANT: Lin, Xinli
; APPLICANT: Tang, Jordan
; TITLE OF INVENTION: Cloning and Characterization of Napsin
; NUMBER OF SEQUENCES: 14
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Patrea L. Pabst
; STREET: 2800 One Atlantic Center, 1201 W. Peachtree
; STREET: St.
; CITY: Atlanta
; STATE: GA
; COUNTRY: USA
; ZIP: 30309-3450
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/974,691
; FILING DATE: 20-NOV-1997
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/031,196
; FILING DATE: 20-NOV-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/046,126
; FILING DATE: 09-MAY-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Pabst, Patrea L.
; REGISTRATION NUMBER: 31,284
; REFERENCE/DOCKET NUMBER: OMRF 166

```

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;
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 404-873-8794
; TELEFAX: 404-873-8795
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 412 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; ORGANISM: Homo sapiens
; US-08-974-691-4

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Query Match 30.7%; Score 617; DB 4; Length 412;
Best Local Similarity 35.7%; Pred. No. 4.7e-58;
Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

QY	4	IVLLGLVAFSECIWKIPLRQVKTMRKTLG--KNMLNFKLKEHPYRLSQISFRGSNLT	IHP 62
Db	9	LALCLLAAPASALVRIPLHKFTTSIRRTMSEVGSGVEDLIAKGP--YSKYTQAPVATGEP	66
QY	63	-----LRNIMNLVYVNGTICTPQEQFQVVDTGSSDLWVPSP--CTM--PACSAVPMWFRL	115
Db	67	IPEVLKNMYMDAQYGEIGICTPQCFVVDGTGSSNLWVPSIHKLLDIACWTHHKYNSD	126
QY	116	QSSTFQPTNKTFTIITYGSGMKGFELAYDVTVRI-----GDLVSTQDPFGLSVVEY	164
Db	127	KSSTVYKNGTSFSDIHYGSGSLGYLSQDTSVPCQSASSASALGGVKVQROVFGEATKP	186
QY	165	GLE--GRNYDGVGLNYPNISFSGAIPFDNLKNQGAISEPVAFYLSK--NKQEGSVVM	220
Db	187	GITFIAKFGGILGMAYPRISVNNVLVPFVDNLQQRLVDQNIQIFSYFLSRDPAQPGGELM	246
QY	221	FGGDVHDYQYKGLNWNPLIEAGENRWVHMDRISMKRTVIACSDGCEALVHTGTSIHBPGR	280
Db	247	LGGTDSKYIKGSLGYLSNVTRKAYVQVHLLDQVEVASGLTLCKEGCEAIVDTGTSLMVGPVD	306
QY	281	LVNNIHLIRTRP--FDSKHVVSCFATKYLPSITFIINGIKYPMTARAYIFKDSRG----	RC 336
Db	307	EVRELQKAIGAVPLIOGEYMIPECKVSTLPAITPLKLGKGKYLSPBDYTLKVSQAGKTL	366
QY	337	YSAFKENTV--RTSRETWILGDAFLRYFVSFDRGNDRIGLARA	378
Db	367	LSQFMGMDIPPPGGPLWGDVFIIGYTYTTFVDRNNRVGFAEA	409

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RESULT 11
US-08-915-095A-12
; Sequence 12, Application US/08915095A
; Patent No. 6383793
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PF107D4
; CURRENT APPLICATION NUMBER: US/08/915,095A
; CURRENT FILING DATE: 1997-08-20
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 12
; LENGTH: 412
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-915-095A-12

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Query Match 30.7%; Score 617; DB 4; Length 412;
Best Local Similarity 35.7%; Pred. No. 4.7e-58;
Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

Qy		4	I V L G L V A F S E C I V K P I R Q V K T M R K T L S G - K N M L K N F L K H P Y R L S Q I S F R G S N L T I H P	62
Dd		9	L A L C L L A A P A S A L V R I P L H K F T S I R R T M S E V G G S V E D L I A K P - - V S K Y S Q A V P A V T E G P	66

QY	6°
Db	6°
QY	11°
Db	12°
QY	16°
Db	18°
QY	22°
Db	24°
QY	28°
Db	30°
QY	33°
Db	36°

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RESULT 12
US-08-798-096-12
; Sequence 12, Application US/08798096
; Patent No. 6387682
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PFI07D2
; CURRENT APPLICATION NUMBER: US/08/798,096
; CURRENT FILING DATE: 1997-02-12
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 12
; LENGTH: 412
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-798-096-12

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Query Match 30.7%; Score 617; DB 4; Length 412;
Best Local Similarity 35.7%; Pred. NO. 4.7e-58;
Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

Qy	4	IVLGLVAFSECIIVKIPLQWQVTKRKTLSG-KNMLKNFLKEHPYRLSQISFRGSLNLTIIHP	62
Db	9	LALCLAAPASALVRIPLHKFTSIRRTMSEVGGSVEDLIAKGP--VSKYSQAVPAVTEGP	66
Qy	63	---LRNTMNLVYVGNITITGTPQEQFQVFDTGSSDLWVPSF-CTM--PACSAPVWFRQL	115
Db	67	IPEVLKNYMDAQYGEIGTIGTPPQCFVVEDTGSSNLWVPSIHCKLLDIACTHHKYNSD	126
Qy	116	QSSTFQPTNKTFTTITYGSGSMKKFLAYDVRI-----GDLVSTDQPPGLSVVEY	164
Db	127	KSTSYVNRGTSFDIHYGSGSLGSLYSDQTSVPCQSASSASALGGVKVQRFVEGTEATQP	186
Qy	165	GLE--GRNYDGVGLNYPNITSFSCAIPFNLKNQGAISEPVFAFYLSK--NKQESVVM	220
Db	187	GITIIAKFQDGLGMAYPRISVNNVLVPFNLMQOKLVLDQNIIEFSLSRDPDAQPGGELM	246
Qy	221	FGGVHDQYVKGELNWIPLIEAGEWRVHMDIRSMKRTVIACSGCEALVHTGTSHIEGGR	280
Db	247	LGGTDSKYYKGSLSLNTWTRKAYQVQVLDQVEVASGUTLCKECECAIVDGTSLMWGPD	306
Qy	281	LVNNIHLRIITRP-FDSKHYVSCFATKPLPSITFIINGIKYPMTARAYIFKDSRG---	336
Db	307	EVRELQKAIGNVPLIQEYMIPECKVSTLPAITLKGKGKYLKSPEDYTLKVSQAKTLC	366
Qy	337	YSAPFKENTV-RTSRETWILGDFAFLRRYFSVDFRGNDRIGLARA	378

Db 367 LSGFMGMDDIPPPSGPLWILGDVFIGRYTTFVDRDNNRVGFAEA 409

RESULT 13

US-08-798-095A-12

; Sequence 12, Application US/08798095A

; Patent No. 6423507

; GENERAL INFORMATION:

; APPLICANT: Hastings, et al.

; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN

; FILE REFERENCE: PF107D3

; CURRENT APPLICATION NUMBER: US/08/798, 095A

; CURRENT FILING DATE: 1997-02-12

; NUMBER OF SEQ ID NOS: 14

; SOFTWARE: Patent In Ver. 2.1

; SEQ ID NO 12

; LENGTH: 412

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-08-798-095A-12

Query Match 30.7%; Score 617; DB 4; Length 412;

Best Local Similarity 35.7%; Pred. No. 4.7e-58;

Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

QY 4 IVLGLVAFSECIKIPRLQVKTMRKTLG-KNNLKNFLKEHPYRLSQISFRGSNLTTHP 62

Db 9 LALCLLAAPASALVRIPLHKFTSIRRTMSEVGSGVEDLIAKGP-VSKYSQAVPAVTEGP 66

QY 63 -----LRNIMNLVYVGNITIGTPPOEFQVVDGTGSSDLWVPF-CTM--PACSAVPWFRL 115

Db 67 IPEVLKNYMDAQYGEIGTIGTPPOCFVFTVGTGSSNLWVPSIHCKLLDIACWIHHKNSD 126

QY 116 QSTFQPTNKTFTTYTGGSGMKGLAYDVTYRI-----GDLVSTDQPFGLSVVEY 164

Db 127 KSSTYVNGTSFDIHYGSGLSGLSDQTVSPVQCQSASSASALGVKVERQVGEATKOP 186

QY 165 GLE--GRNVDGVLGNYPNTSFGAIPEDNLKNOGAISEPVFAFYLSK--NKGSGSVVM 220

Db 187 GITTIAAKFGILGMAYPRISVNVNLPVFDLMQOKLDQDNIFSYLSRDPDAOPGGELM 246

QY 221 FGGVDHGYKGLNWIPLIEAGERNVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPR 280

Db 247 LGGYDSKYYKGLSYLNWTRKAYQVHLVDQEVASGLTLCKEGCEAVDTGSLMVGPD 306

QY 281 LVNNIHLIRTRP-FDSKHYVSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRG---RC 336

Db 307 EVRELQRAIGNAVPLIQEYMPCEKVSTLPAITLKLGGKGYKLSPEDYTLKVSQAGKTL 366

QY 337 YSAFKENTV-RTSRETWILGDAFLRRYFSVFDGRNDRIGLARA 378

Db 367 LSGFMGMDDIPPPSGPLWILGDVFIGRYTTFVDRDNNRVGFAEA 409

RESULT 14

US-08-974-691-3

; Sequence 3, Application US/08974691

; Patent No. 622103

; GENERAL INFORMATION:

; APPLICANT: Keolsch, Gerald

; APPLICANT: Lin, Xinli

; APPLICANT: Tang, Jordan

; TITLE OF INVENTION: Cloning and Characterization of Napsin

; NUMBER OF SEQUENCES: 14

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Patrea L. Pabst

; STREET: 2800 One Atlantic Center, 1201 W. Peachtree

; STREET: St.

; CITY: Atlanta

; STATE: GA

; COUNTRY: USA

; ZIP: 30309-3450

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/974,691
; FILING DATE: 20-NOV-1997
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/031,196
; FILING DATE: 20-NOV-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/046,126
; FILING DATE: 09-MAY-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Pabst, Patrea L.
; REGISTRATION NUMBER: 31,284
; REFERENCE/DOCKET NUMBER: OMRF 166
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 404-873-8794
; TELEFAX: 404-873-8795
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 419 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-974-691-3

Query Match 29.8%; Score 598; DB 4; Length 419;

Best Local Similarity 34.8%; Pred. No. 5.5e-56;

Matches 138; Conservative 80; Mismatches 146; Indels 32; Gaps 13;

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Db 11 LLLGLLEPEEAKLIRVPLQRIHLGHRIL---NPLNGW--EQLAELSRSTSGGNPSFVPL 65

QY 64 RNIMNLVYVGNITIGTPPOEFQVVDGTGSSDLWVPF-CTM--PACSAVPWFRL 115

Db 66 SKFMATQVFTGLGTPPQNFVFTGSSNLWVPSIRCHFFSL-AC---WFFHREPNK 120

QY 116 QSTFQPTNKTFTTYTGGSGMKGLAYDVTYRIACSDGCEALVHTGTSHIEGPR 173

Db 121 ASSSRPNCTKFAIQGTGRLSGILSQDNLITGIIHDAFVTFGEALWEPSLIFALAHFDG 180

QY 174 VLGLNVPNTSFGAIPEDNLKNOGAISEPVFAFYLSKKNQ--EGSVVMFGVDHGYK 231

Db 181 ILGLGFPPLAVGVQPPDLAMVEQGLLEKPVFSFYLNRSDESGDGGELVGGSDPAHYVP 240

QY 232 ELNWIPLIEAGERNVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPR 291

Db 241 PLTFIPVTIPAYQVHVESKVGVTGLSCAQGCSAILDTGTSITGPSEIRALNKAIGG 300

QY 292 RPF-DSKHYVSCFATKYLPSITFIINGIKYPMPTARAYIFKDSR---GRCYSAFKENTV-R 346

Db 301 YPFLNGQYFIQCSKTPPLPPVSEFHLGVWFNLGQDVVIQDLQSDVGLCLLGFQALDIPK 360

QY 347 TSRETWILGDAFLRRYFSVFDGRN----DRIGLARA 378

Db 361 PAGPLWILGDVFLGYPYVAVFDRGDKNVGPRVGLARA 396

RESULT 15

US-09-705-448-10

; Sequence 10, Application US/09705448

; Patent No. 6432690

; GENERAL INFORMATION:

; APPLICANT: Xu, Hong

; APPLICANT: Bruno, Sandra A.

; APPLICANT: Elsenboss, Laura A.

; APPLICANT: Fogliano, Michael

; APPLICANT: Cohan, Victoria L.

APPLICANT: Bandman, Olga
TITLE OF INVENTION: HUMAN ASPARTIC PROTEASES
FILE REFERENCE: PF-0458-1 CIP
CURRENT APPLICATION NUMBER: US/09/705,448
CURRENT FILING DATE: 2000-11-02
PRIOR APPLICATION NUMBER: 09/116,641
PRIOR FILING DATE: 1998-07-16
PRIOR APPLICATION NUMBER: 09/008,271
PRIOR FILING DATE: 1998-01-16
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSeq for Windows Version 3.0
SEQ ID NO 10
LENGTH: 419
TYPE: PRT
ORGANISM: MUS MUSCULUS
FEATURE:
OTHER INFORMATION: 1906810, GenBank
US-09-705-448-10

Query Match 29.6%; Score 594; DB 4; Length 419;
Best Local Similarity 34.8%; Pred. NO. 1.5e-55;
Matches 138; Conservative 78; Mismatches 148; Indels 32; Gaps 13;
QY 5 VLLGLVAESEC-IVKIPLRQYKTKTSLGKNMLKFLKEHPYRLSQISFRGSNLTIRPL 63
Db 11 LLLGNLEPEEAKLRVPQRIHLGHRIL---NPLNGW--EQLAELSRSTSGGNPSEVPL 65
QY 64 RNIMNLVVVGNITIGTPQEFQVVDGTSSDLWVPS---FCTMPACSAVPVWFQ----L 115
Db 66 SKFMTQYFGTIGLTPQNTVVDGTSSNLWVPSFTRCHFFSL-AC----WFHHRFNPK 120
QY 116 QSSTFQPTNKFTTITYGSGSMKFLAYDTRIGDIAVSTDQPFGLSWVEYGL--EGRNVDG 173
Db 121 ASSSRPNKTKFAIQYGTGRSLGSLSDNLGIGIHDAFVTFGEALWEPFLIFALAHFDG 180
QY 174 VGLNYPNIFSGAIPFDNLKNQAISEPVFAFYLKSKNQ--EGSVVMFGVDHQYKYG 231
Db 181 ILGLGFPLAVGGVQPLDAMVQGLLEKVPFVFLNRDSESGDGGELVGGSDPAHYVP 240
QY 232 ELNWIPLIEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRT 291
Db 241 PLTFIPVTIPAYWQVHMESVKVGTGLSACQCSAILDGTSLITGPSEIRALNKAIGG 300
QY 292 RPF-DSKHVSCFATKYLPSITFIINGIKYPMTARAYIFK---DSRGRCSAFKENTV-R 346
Db 301 YPFLNGQYFIQCSKTPTLPVPVSFHLGGVWFNLTDQDYVIKILQSDVGLCLLGFQALDIPK 360
QY 347 TSRETWILGDAFLRRYFSVDFDRGN---DRIGLARA 378
Db 361 PAGPLWILGDVFLGPLYAVDFDRGKNVGRVGLARA 396

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GenCore version 5.1.4_p5_4578
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

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(without alignments)
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Title: US-09-273-164-32

Perfect score: 2008

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Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

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Database : Published Applications AA:*

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- 3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB_PEP.*
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- 12: /cgn2_6/ptodata/2/pubpaa/US10_PUBCOMB_PEP.*
- 13: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB_PEP.*
- 14: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB_PEP.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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2	803	40.0	326	9	US-09-795-903A-31
3	803	40.0	326	10	US-09-796-264-31
4	803	40.0	326	10	US-09-845-226-31
5	772.5	38.5	396	10	US-09-215-450-22
6	772.5	38.5	396	10	US-09-953-956-13
7	772.5	38.5	396	12	US-10-114-464-13
8	686.5	34.2	388	9	US-09-470-954A-48
9	686.5	34.2	388	10	US-09-215-450-24
10	617	30.7	412	10	US-09-215-450-25
11	617	30.7	412	10	US-09-953-956-12
12	617	30.7	412	12	US-10-114-464-12
13	594	29.6	419	10	US-09-789-919-44
14	574.5	28.6	433	9	US-09-964-899-11
15	544	27.1	406	10	US-09-215-450-26
16	542	27.0	395	9	US-10-094-080-3
17	521.5	26.0	396	9	US-09-470-954A-49
18	443	22.1	390	9	US-09-969-384-15
19	341	17.0	262	10	US-09-915-582-66

20	305	15.2	285	10	US-09-925-302-670	Sequence 670, Appl
21	288.5	14.4	430	9	US-10-105-481-3	Sequence 3, Appli
22	271.5	13.5	184	10	US-09-925-297-737	Sequence 737, App
23	265.5	13.2	212	10	US-09-915-582-87	Sequence 87, Appl
24	262	13.0	394	9	US-09-879-389B-2	Sequence 2, Appli
25	232.5	11.6	433	10	US-09-794-927-26	Sequence 26, Appl
26	232.5	11.6	433	10	US-09-795-847-26	Sequence 26, Appl
27	232.5	11.6	433	10	US-09-794-743-26	Sequence 26, Appl
28	232.5	11.6	433	10	US-09-794-748-26	Sequence 26, Appl
29	232.5	11.6	433	10	US-09-794-925-26	Sequence 26, Appl
30	232.5	11.6	433	10	US-09-681-442-26	Sequence 26, Appl
31	232.5	11.6	446	10	US-09-794-927-22	Sequence 22, Appl
32	232.5	11.6	446	10	US-09-795-847-22	Sequence 22, Appl
33	232.5	11.6	446	10	US-09-794-743-22	Sequence 22, Appl
34	232.5	11.6	446	10	US-09-794-748-22	Sequence 22, Appl
35	232.5	11.6	446	10	US-09-794-925-22	Sequence 22, Appl
36	232.5	11.6	446	10	US-09-681-442-22	Sequence 22, Appl
37	232.5	11.6	459	10	US-09-794-927-24	Sequence 24, Appl
38	232.5	11.6	459	10	US-09-795-847-24	Sequence 24, Appl
39	232.5	11.6	459	10	US-09-794-743-24	Sequence 24, Appl
40	232.5	11.6	459	10	US-09-794-748-24	Sequence 24, Appl
41	232.5	11.6	459	10	US-09-794-925-24	Sequence 24, Appl
42	232.5	11.6	459	10	US-09-681-442-24	Sequence 24, Appl
43	232.5	11.6	501	10	US-09-794-927-8	Sequence 4, Appli
44	232.5	11.6	501	10	US-09-794-927-8	Sequence 8, Appli
45	232.5	11.6	501	10	US-09-795-847-4	Sequence 4, Appli

ALIGNMENTS

RESULT 1

US-09-215-450-23

; Sequence 23, Application US/09215450

; Patent No. US20020068278A1

; GENERAL INFORMATION:

; APPLICANT: Giese, Klaus

; APPLICANT: Xin, Hong

; TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES

; FILE REFERENCE: 1451.100 / 210030.447

; CURRENT APPLICATION NUMBER: US/09/215,450

; CURRENT FILING DATE: 1998-12-17

; NUMBER OF SEQ ID NOS: 27

; SOFTWARE: FastSeq for Windows Version 3.0

; SEQ ID NO 23

; LENGTH: 388

; TYPE: PRT

; ORGANISM: Homo sapien

US-09-215-450-23

Query Match 46.0%; Score 923.5; DB 10; Length 388;
Best Local Similarity 49.5%; Pred. No. 1e-81;
Matches 191; Conservative 67; Mismatches 117; Indels 11; Gaps 8;

QY	1	MKWIVLLGLVAFSEICIV-KIPLRQVKTMRKTLGKNNKFLKEH---PYRLSQISFRGS	56
DB	1	MKWLILLGLVAFSEICIVKYLIRKSLRSLTSLERGLLKDFLKHNLNPKKYPQWEAP	60
QY	57	NLT-IHPLRNIMLVVGNITIGTPPEQFQVDFDTGSSDLWPS-FCIMPACSAVWFQ	114
DB	61	TLVDEQPLENLDMEYFGTIGTTPAQDFTVFDTGSSNLWVSVYCSSLACTNHNFP	120
QY	115	LOSSTQPTNKFTITYGGSGMKGLAYDVRIGDLVSTQDFGLSVVEYG--LEGNYD	172
DB	121	EDSSTYQSTSETVSYTGTGSMTGILGYDTVQVGGISDTNQIFGLSETPGSFYAPFD	180
QY	173	GVILGNYPNISGATPIEDNLKNOGAISEPVAFYLSKNQSGSVVFGVDHGYKGE	232
DB	181	GILGLAYPSTSSGATPEVDNIWNGLVSDLFVSVLSADDSQSGSVVIFGIDSSYYTGS	240
QY	233	LNWIPLEAGEVFWHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNHRLI-RT	291
DB	241	LNWVPVTEGYWQITVSDITMNGEAIACAEQCAIVDTGTSLLTGPTSPIANIQSDIGAS	300

Db	185	TVEGYWITVDSTIMNGEATACAEGCOAIYDGTSLTGPTSPIANIQSDIGASENSDGD	244
Qy	298	HYVSCFATKLPSTFTINGIKYPMWARYIFKDSRGVCSAFKENTVRT -GRETWILD	356
Db	245	MVYSCSAISSLPDIVFTINGVQVPVPVSAVLQ -SEGSCISGFGGMNLTESELWILD	303
Qy	357	AFLRRYFVSFDGRNDRIGLA	376
Db	304	VFIQYETVFEDRANNVGLA	323

RESULT 4
 US-09-845-226-31
 ; Sequence 31, Application US/09845226
 ; Patent No. US20020115600A1
 ; GENERAL INFORMATION:
 ; APPLICANT: Tang, Jordan J.N.
 ; APPLICANT: Hong, Lin
 ; APPLICANT: Ghosh, Arun K.
 ; TITLE OF INVENTION: Inhibitors of Memapsin 2 and Use Thereof
 ; FILE REFERENCE: OMRF 182
 ; CURRENT APPLICATION NUMBER: US/09/845,226
 ; CURRENT FILING DATE: 2001-04-30
 ; PRIOR APPLICATION NUMBER: 09/603,713
 ; PRIOR FILING DATE: 2000-06-27
 ; PRIOR APPLICATION NUMBER: 60/168,060
 ; PRIOR FILING DATE: 1999-11-30
 ; PRIOR APPLICATION NUMBER: 60/177,836
 ; PRIOR FILING DATE: 2000-01-25
 ; PRIOR APPLICATION NUMBER: 60/178,368
 ; PRIOR FILING DATE: 2000-01-27
 ; PRIOR APPLICATION NUMBER: 60/210,292
 ; PRIOR FILING DATE: 2000-06-08
 ; NUMBER OF SEQ ID NOS: 31
 ; SOFTWARE: PatentIn Ver. 2.1
 ; SEQ ID NO 31
 ; LENGTH: 326
 ; TYPE: PRT
 ; ORGANISM: Homo sapiens
 ; FEATURE:
 ; OTHER INFORMATION: Amino acids 2-5, 6-9, 13-20, 25-32, 65-66,
 ; OTHER INFORMATION: 79-87, 89-91, 99-106, 119-122, 150-154, 157-160,
 ; OTHER INFORMATION: 180-183, 191-194, 196-199, 201-204, 210-213,
 ; OTHER INFORMATION: 221-233, 258-262, 265-269, and 275-278 are
 ; OTHER INFORMATION: Amino acids 281-284, 286-288, 298-301, 303-306,
 ; OTHER INFORMATION: and 319-324 are Beta strands
 ; OTHER INFORMATION: Amino acids 48-51, 111-114, 136-142, 225-228,
 ; OTHER INFORMATION: 249-254, 271-274, and 303-306 are Helices
 ; OTHER INFORMATION: Amino acids 12-13, 30, 32, 34-35, 73-77, 79-82,
 ; OTHER INFORMATION: 120, 189, 213, 215, 217-220, 287, 289, 291, 303-306,
 ; OTHER INFORMATION: and 300 are residues in contact with pep-
 ; OTHER INFORMATION: Pepsin
 ; US-09-845-226-31

Query Match	40.0%	Score 803;	DB 10;	Length 326;
Best Local Similarity	50.3%;	Pred. No. 4.2e-70;		
Matches 161;	Conservative 54;	Mismatches 99;	Indels 6;	Gaps 5;
QY	62	PLRIMNLVVGNTIGTGPQEFQVVDGTGSSDLWVPS-FCIMPACAPWVFRQLQSTF	120	
Db	5	PLENYLMEYFGTIGTGPQDFTVFEDTSSNLWVPSVYGCSSLACTIONHNRFNPEDSSTY	64	
QY	121	QPTNKTFTIYGGSGMGFLAYDVRIGDLVSTDPQGLSVVEYG--LEGRNYDGVGLGN	178	
Db	65	QSTSETVSIYTGSGMTGILGYDITVQVGGSDTQIQLSETEPGSFLLYAPFDGIIGLA	124	
QY	179	YPNISFGCAIPFDNLKNQGAISEPFAFLYSKKNQGSVVMFGVDHQYKYGELNWIPL	238	
Db	125	YPSISSSGAPVFEDNIWNGQLVSODLFSVYLSADDQSGSVVIFGGIDSSYYTGSINWVPV	184	
QY	239	IEAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSHIEGPGRLVNNIHRLLI-RTRPFDSK	297	

Db	185	TVEGYWQITVDSTIMNGEATACACGCAQIVDTGSLTGTPTPIANTQSDIGASENSDGD	2144
Qy	298	HYVSCFATKLPSTTFIINGIKYPMTARAYIFKDSGRGCYSAPKENTVVRT-SRETWILGD	356
Db	245	: : : : : : : : :	303
Qy	357	AFLRRYSVEDRGNDRIGLA	376
Db	304	VFIQRYETVDFDRANNVGLA	323

```

RESULT 5
US-09-215-450-22
; Sequence 22, Application US/09215450
; Patent NO. US20020068278A1
; GENERAL INFORMATION:
; APPLICANT: Giese, Klaus
; APPLICANT: Xin, Hong
; TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES
; FILE REFERENCE: 1451.100 / 210030.447
; CURRENT APPLICATION NUMBER: US/09/215.450
; CURRENT FILING DATE: 1998-12-17
; NUMBER OF SEQ ID NOS: 27
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 22
; LENGTH: 396
; TYPE: PRT
; ORGANISM: Homo sapien
US-09-215-450-22

```

[illegible]

: OTHER INFORMATION: 319-324 are Beta strands
 : OTHER INFORMATION: Amino acids 48-51, 111-114, 136-142, 225-234,
 : OTHER INFORMATION: 249-254, 271-274, and 303-306 are Helices
 : OTHER INFORMATION: Amino acids 12-13, 30, 32, 34-35, 73-77, 111, 117,
 : OTHER INFORMATION: 120, 189, 213, 215, 217-220, 287, 289, 291, 298,
 : OTHER INFORMATION: and 300 are residues in contact with pepstatin.
 : OTHER INFORMATION: Pepsin
 : PS-09-845-226-31

[illegible]

293 PFDSKHY----VSCFATKYLPSITFFINGIKYPMWRAVIFKDSRGRCHVSAKENTVTRTS 348
297 GAQEDXGQFLVNCNSIQNLPSITFFINGVFLPPSPILSNN-GYC-TVGVPEPTLYLS 354
349 RE---TWILGDAFLRRYFSVFDRGNDRIGLARA 378
355 QNGOPLMILGDVFLRSYYSVIDLGNRRNVGFATA 387

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RESULT 9
US-09-215-450-24
; Sequence 24, Application US/09215450
; Patent No. US26020068278A1
; GENERAL INFORMATION:
; APPLICANT: Giese, Klaus
; APPLICANT: Xin, Hong
; TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES
; FILE REFERENCE: 1451.100 / 210030.447
; CURRENT APPLICATION NUMBER: US/09/215.450
; CURRENT FILING DATE: 1998-12-17
; NUMBER OF SEQ ID NOS: 27
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 24
; LENGTH: 388
; TYPE: PRT
; ORGANISM: Homo sapien
US-09-215-450-24

```

```

Query Match      34.2%; Score 686.5; DB 10; Length 388;
Best Local Similarity 37.9%; Pred. No. 1.2e-58;
Matches 149; Conservative 81; Mismatches 142; Indels 21; Gaps 12;

QY      1 MKW--IVLGLVAFSECIKVIPLHQVTMRTLTSGKNMKLNKFLKEHPYRLS-QISFRGSN 57
      ||| :||| : |||::|||::||| : ||| : ||| : ||| : ||| :
Db      1 MKWVVVLVCILLEAAVVKVPLKFKKSIRETMKEKGLGELFRTKHYDPAAKYRFGDLS 60

QY      58 LTHPLRNIMNLVYGNITGCTPPQEQVQVVDTSGLDWVES-PCTMPACSAIPVWFRLQ 116
      : ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| : ||| :
Db      61 VTEPMA-YMDAAVFGISIGTTPQNFVLVDTSGLNVLVSVVCQSQACSHSRFNPS 119

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Qy	117	SSTFQPTNKTFTTYGSGMKGFAYDVTVRIGDLVSTDQPGLSVVVEYGLE--GRNYDG	174
		: : : : : : : :	
Db	120	SSTYSTNGQFFSLQYGSGSLTGFGGYDTLTIVOSIQVPNQEFGLSENEPNTNVEYAQFGDI	179
Qy	175	LGLNYPNISPSGAIPFDNLKNOGATSEPWFAPFLSKNK-QGSVMFMGGVDHVKYKDEL	233
		: : : : : : : :	
Db	180	MGLAYPALSVDEATTAMQGMVQEGALTSVPFSVLYLNQOGSSGGAVVTCGVDSLLTGDI	239
Qy	234	NWPLPLEAGRWVRHMDRISMKRTVIA-CSDGEALVHTCTSHIEGPRLVNNIHLRTR	292
		: : : : : : : :	
Db	240	YWAPVTQELYWQIGIEEFLIGGOASGCSEGCQAIVDTGTSLTTPQQYMS---ALLQAT	296
Qy	293	PFDSKHY----VSCEATKLPSFTFIINGIKYPMTAAYIFKDSRGRCYSAFKENTVRTS	348
		: : : : : : : : :	
Db	297	GAQEDVGQLVNCNSIQNLPSLTFIINGVEFLPPSSVILSNNGYC-TVCGETPYLSS	354
Qy	349	RE---TWIIGD AFLRRYFSVFDRGNDRIGLARA	378
		: :	
Db	355	QNQGPAWLIGDLVFLRSYYSVIDLGNRNRVGFATA	387

```

RESULT 10
US-09-215-450-25
; Sequence 25, Application US/09215450
; Patent No. US20020068278A1
; GENERAL INFORMATION:
; APPLICANT: Giese, Klaus
; APPLICANT: Xin, Hong
; TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES
; FILE REFERENCE: 1451.100 / 210030.447
; CURRENT APPLICATION NUMBER: US/09/215,450
; CURRENT FILING DATE: 1998-12-17
; NUMBER OF SEQ ID NOS: 27

```

```
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 25
; LENGTH: 412
; TYPE: PRT
; ORGANISM: Homo sapien
US-09-215-450-25
```

Query Match	30.7%	Score 617;	DB 10;	Length 412;
Best Local Similarity	35.7%	Pred. No. 7.3e-52;		
Matches 144;	Conservative	76;	Mismatches 153;	
			Indels 30;	Gaps 11;

Qy	4	IVLGLVAFSCIVKIPLRQVKTMKRLTSG-KNMLKNFLKEHPYRSLQISFRGSLNLT	IHP	62
Db	9	LALCLLAAPASALVRIPLHKFTSIRRTMSEVGGSVEDLIAKGP-VSKYSQAVPAVTEGP	66	
Qy	63	----LRNIMNLVYVGNITIGTTPQEFQFQVFDTGSSDLWVPSF-CTM--PACSA	PVWFRQL	115
Db	67	IPEVLKNYMDAQYGEIGICTPPQCTFVFDTGSSNLWVPSIHCKLILDIACWIHHKYN	SD	126
Qy	116	QSSTFQPTNKTFTTYTGGSMKGLAYDVTVRI-----GDLVSTDQPGLSVVEY	164	
Db	127	KSTYVRNGTSFDIHYGSGSLGYSQDTSVPCQSASSASALGGVKVQRQVGEATKQP	186	
Qy	165	GLE--GRNYDGVGLNVPNTISFGAIPFONLKNQGAISPPVAFYLSK--NKQESVVM	220	
Db	187	GITFIAAKFDGILGMAYPRISVNNVLVPFDNLMMQQLVDQNIQSFYLSRDPDAQGELM	246	
Qy	221	FGVDHQQYYKELWNIPLEIAGEWRVHMORISMKRTVIACSDGCEALVHTGTSHIEGPR	280	
Db	247	LGGTDSKYVYKGSLSYLVNTRKAYQVHLDQVEVASGLITLCKECCALVDGTGSLWGPVD	306	
Qy	281	LVNNIHLIITRPP-FDSKHVYVCFATKYLPSITFIINGIKYPMARAYIFKDSRG---	RC	336
Db	307	EVRELQAIAGVPLIOGEYMIPEKYSTLTLPAILTKLGGKGYKLSPEDYTLKVQSAGKTL	366	
Qy	337	YSAFKENTV-RTSRETWILGDALFRYFSVFDGRDNRIGLARA	378	
Db	367	LSGFMGMDDIPPPGSLWILGDTFGRYTYTVDNRNNRVGFAEA	409	

RESULT 11
 US-09-953-956-12
 ; Sequence 12, Application US/09953956
 ; Patent No. US20020072107A1
 ; GENERAL INFORMATION:
 ; APPLICANT: Hastings, et al.
 ; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
 ; FILE REFERENCE: PF107D2D1
 ; CURRENT APPLICATION NUMBER: US/09/953,956
 ; CURRENT FILING DATE: 2001-09-18
 ; PRIORITY APPLICATION NUMBER: 09/219,441
 ; PRIOR FILING DATE: 1998-12-23
 ; NUMBER OF SEQ ID NOS: 14
 ; SOFTWARE: PatentIn Ver. 2.1
 ; SEQ ID NO 12
 ; LENGTH: 412
 ; TYPE: PRT
 ; ORGANISM: Homo sapiens
 US-09-953-956-12

Query Match	30.7%;	Score 617;	DB 10;	Length 412;
Best Local Similarity	35.7%;	Pred. No. 7.3e-52;		
Matches 144; Conservative	76;	Mismatches 153;	Indels 30;	Gaps 11;

QY	4	IVLLGLVAFSECIVKPLROVTKMRKILSG-KNNLKNFLKEHPYRLSQISFRGSNUIIHP	62
Db	9	LALCLLAAPASALVRLPHLHKTIRITSMSEGVGSDVEDLTKG9--VSKYSQAVPAVTEGP	66
QY	63	-----LRNIMNLVTVGNITIGTPQEFQVVFDTGSSDLWYPSF-CTM--PACSAPVMFROL	115
Db	67	IPEVLKNYMDAQYGEIGTIGTPQCFVTFVFDTGSSNLWYPSHICKLLDIACWTHHKYNSD	126
QY	116	QSSTFOPTNKTFTITYTSGSGMKGFAYDVTVRI-----GDLVTSDDQFGLSWVEY	164

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Db 127 KSSYVKNKTSFDHYHSGSLGSLYSDQTVSPVPCOSASASALGGVKVERQVFGGATKQP 186
QY 165 GLE--GRNYDGLVGLNPNISFSGAIPFDNLKNQGAISEPVFAFYLSK--NKQEGSVYM 220
Db 187 GITFAAKFDGILGMAYPRISVNNVLPFDNLMOQKLVQDNIFSYLSRDPDAQPGGELM 246
QY 221 FGVVDHQYKKGELNWIPLIEAGERNVHMDRISMTKRTVIACSDGCBALVHTGTSIHGPGR 280
Db 247 LGGTDSKYKGSLSYLVNTRKAYWQVHLQDQVEVASGLTLCKEGCEAIVDTGTSLMVGPVD 306
QY 281 LVNNHRLIRTRP-FDSKHVYSCFATKYLPSITFTIINGIKYPMPTARAYIFKDSRG---RC 336
Db 307 EVRELQKAIGAIVPLIQGEYMIPCEKRVSTLPALTILGKGKYLSPEDYTLKVSQAGKTLIC 366
QY 337 YSAFKNVT-RTSRETWILGDAFLRRYFVSFDRGNDRIGLARA 378
Db 367 LSGFMGMDIPPPSGPLWILGDVFIGRYTYTFDRDNNRVGFABA 409

RESULT 12
US-10-114-464-12
; Sequence 12, Application US/10114464
; Patent No. US2002014248A1
; GENERAL INFORMATION:
; APPLICANT: Hastings, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; FILE REFERENCE: PFI07D5
; CURRENT APPLICATION NUMBER: US/10/114.464
; CURRENT FILING DATE: 2002-04-03
; PRIOR APPLICATION NUMBER: 08/553,125
; PRIOR FILING DATE: 1995-11-07
; PRIOR APPLICATION NUMBER: 08/208,007
; PRIOR FILING DATE: 1994-03-08
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 12
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-114-464-12
```

```
Query Match 30.7%; Score 617; DB 12; Length 412;
Best Local Similarity 35.7%; Pred. No. 7.3e-52;
Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

QY 4 IVLLGLVAFSECIYKIPLRQVTKMKTLSG-KNMLKNFLKEHPYRLSQISFRGSNLTIH 62
Db 9 LALCLAAPASALVRIPLHKFTSIRRTMSEVSGSVEDLIAKGP--VSKYSQAVPAVTEGP 66
QY 63 ----LRNTMNLVYVGNITIGTPPQEQVVEDTGSSDLWVPSF-CTM--PACSAPVWFROL 115
Db 67 IPEVLKNTMDAQYGEIGTGPQCFVTVFDGSSNLWVPSIHCKLLDITACWIHKYNSD 126
QY 116 QSSFTQPTNKTFTITYGSGSMKGFAYDVTVRIGDLVSTDQPFGLSVVEYGL--EGRNYD 173
Db 127 KSSYVKNKTSFDHYHSGSLGSLYSDQTVSPVPCOSASASALGGVKVERQVFGGATKQP 186
QY 165 GLE--GRNYDGLVGLNPNISFSGAIPFDNLKNQGAISEPVFAFYLSK--NKQEGSVYM 220
Db 187 GITFAAKFDGILGMAYPRISVNNVLPFDNLMOQKLVQDNIFSYLSRDPDAQPGGELM 246
QY 221 FGVVDHQYKKGELNWIPLIEAGERNVHMDRISMTKRTVIACSDGCBALVHTGTSIHGPGR 280
Db 247 LGGTDSKYKGSLSYLVNTRKAYWQVHLQDQVEVASGLTLCKEGCEAIVDTGTSLMVGPVD 306
QY 281 LVNNHRLIRTRP-FDSKHVYSCFATKYLPSITFTIINGIKYPMPTARAYIFKDSRG---RC 336
Db 307 EVRELQKAIGAIVPLIQGEYMIPCEKRVSTLPALTILGKGKYLSPEDYTLKVSQAGKTLIC 366
QY 337 YSAFKNVT-RTSRETWILGDAFLRRYFVSFDRGNDRIGLARA 378
Db 367 LSGFMGMDIPPPSGPLWILGDVFIGRYTYTFDRDNNRVGFABA 409
```

```
RESULT 13
US-09-789-919-44
; Sequence 44, Application US/09789919
; Patent No. US20020064855A1
; GENERAL INFORMATION:
; APPLICANT: Lemischka, Thor
; APPLICANT: Moore, Kateri
; TITLE OF INVENTION: GENES THAT REGULATE HEMATOPOIETIC BLOOD FORMING STEM CELLS AND USES THEREOF
; FILE REFERENCE: 2275-1-005
; CURRENT APPLICATION NUMBER: US/09/789,919
; CURRENT FILING DATE: 2001-02-21
; NUMBER OF SEQ ID NOS: 96
; SOFTWARE: Patent In Ver. 2.0
; SEQ ID NO 44
; LENGTH: 419
; TYPE: PRT
; ORGANISM: Mus musculus
US-09-789-919-44

Query Match 29.6%; Score 594; DB 10; Length 419;
Best Local Similarity 34.8%; Pred. No. 1.3e-49;
Matches 138; Conservative 78; Mismatches 148; Indels 32; Gaps 13;

QY 5 VLLGLVAFSEC-IVKTPLRQVTKMKTLSGKNMLKNFLKEHPYRLSQISFRGSNLTIHPL 63
Db 11 LLLGNLEPEEAKLIRVPLQRIHLGHRIL--NPLNGW--EQLAELSRSTSTSGGNPSFVPL 65
QY 64 RNTMNLVYVGNITIGTPPQEQVVEDTGSSDLWVPS----FCTMPACSAPVWERQ---L 115
Db 66 SKFMTQYFGTIGLGTTPNQFTVVDGSSNLWVPSFTRCHFFSL-AC----WFHHRFNPK 120
QY 116 QSSFTQPTNKTFTITYGSGSMKGFAYDVTVRIGDLVSTDQPFGLSVVEYGL--EGRNYD 173
Db 121 ASSFRPANGTKFAIQGTGRLSGILSQDNLTIGIHDAFTVFGGALNEPSLIFALAHFDG 180
QY 174 VLGLNPNISFSGAIPFDNLKNQGAISEPVFAFYLSKNKQ--EGSVYVFMGGVDHQYK 231
Db 181 ILGLGPTTAVGGVQPPDLDAWEGQLLEKPVFSYLNDRSDSGSGGELVLGSDPAHYVP 240
QY 232 ELNWIPLIEAGERNVHMDRISMTKRTVIACSDGCBALVHTGTSIHGPGRLVNNHRLIRT 291
Db 241 PLTFIPVTPAYWQVHMESVKVGTGLSLCAQCSAILDTGTSITGPSEIRALNKAIGG 300
QY 292 RPF-DSKHVYSCFATKYLPSITFTIINGIKYPMPTARAYIFK---DSRGRCYSAPKENTV-R 346
Db 301 YPFLNGQYFTQCSKTPTLPVPSFHLGWFNLTGQDYVIKILQSDVGLCLLGLFOALDIPK 360
QY 347 TSRETWILGDAFLRRYFVSFDRGN---DRIGLARA 378
Db 361 PAGPLWILGDVFLGYPVAVFDRGDKNVGPRVGLARA 396

RESULT 14
US-09-964-899-11
; Sequence 11, Application US/09964899
; Patent No. US20020174446A1
; GENERAL INFORMATION:
; APPLICANT: Cohen, Dalia et al.
; TITLE OF INVENTION: Identification of Genes Involved in Alzheimer's Disease Using Drosophila Melanogaster
; FILE REFERENCE: 4-31612 A
; CURRENT APPLICATION NUMBER: US/09/964,899
; CURRENT FILING DATE: 2001-09-27
; PRIOR APPLICATION NUMBER: 60/236,893
; PRIOR FILING DATE: 2000-09-29
; PRIOR APPLICATION NUMBER: 60/298,309
; PRIOR FILING DATE: 2001-06-14
; NUMBER OF SEQ ID NOS: 53
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 11
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Qy	165	GLGRNYDGVGLNYLPNI	SFSGAIPFDNLKNOGALSEPWFAYL	---SKNQE-GSVVM	220
Db	186	ML--AEFDGVVGMGFTEQ	ALGRVTPFDNIISOGVLKEDVDFSY	YNRDSNSQSLGGQIV	243
Qy	221	FGVDHQYYKGLNWLPTLE	AGRWRYVMDRISMKRVTIACSDCEAL	VHTGTSHIEGPKR	280
Db	244	LGSDPOHYEENFHYINL	IKTGWQIQOMKGVSVGSSTLLCEDGL	ALVDTGASYISGS---	301
Qy	281	LVNNIHRLI-----	RTRPDSKHYVSCFATKYLPSTFI	TINGIKYPMTARAVIKD	SRGR 335
Db	302	-TSIEKLMEALGAKKRL	FD--YVVKCNBEGPTLPDISHLGG	KGYTLTSADYVFQES---	355
Qy	336	CYSAFKENTVTR-----	TSRETWILGDALFLRRYSVFDRG	NDRTIGLARA 378	
Db	356	-YSSKICTLCTIAIHAMD	IPPTGPTWALGAFYIRKFEYTEFDR	NNRNRIGFALA 405	

Search completed: April 2, 2003, 17:48:36
Job time : 20 secs

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; LENGTH: 433
; TYPE: PRT
; ORGANISM: Homo Sapien
US-09-964-899-11

Query Match      28.6%; Score 574.5; DB 9; Length 433;
Best Local Similarity 34.9%; Pred. No. 1.1e-47;
Matches 138; Conservative 71; Mismatches 155; Indels 31; Gaps 12;

QY      6  LLGIVAFSECIIVKIPLQVQKTRKTLGSKNMLKFLKEHPYRLSQIS--FRGSNLTIHPL 63
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      29  LLNVPESGATLIIRPLHRVQPGRRIL---NLLRGW--REPAELPKLGAPSGDKPIFVPL 83
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      64  RNTMNLVYVGNITIGTPPEQFVQVVDGTSSDLWPVSECTNPAC---SAPVW---ERQLQ 116
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      84  SNTRDVOYFGEIGLGTGPQNFVAFDGTSSNLWVPS----RRCHFFSVPCWLHHRFDPKA 139
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      117 SSTFOPTNKFTTITYGSGMKFLAYDTRIGDLVSTDQPGLSVVEYGL--EGKNYDGV 174
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      140 SSSFQANGTFAIQYGTGRVDGILSEDKLTGGIKGASVIFGEALWEPFLVFAHFQGI 199
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      175 LGLNYPNIFSGAIPIDNLKNQOAISEPPFAFYLSKNKQF--GSVWFGVDHQYYKGE 232
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      200 LGLGFPILSVEGVRPPMDVLVEQGLLQKPVFSFYLNRPDPEPDGELVLGSDPAHYTPP 259
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      233 LNWIIPLIEAGEWRYVHMDRISMKRTVIAACSDCEALVHTGTHSIEGPGRLVNNIHRLTR 292
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      260 LTFVPVIVPAWQIHMERVKVGPLGLTCAKCAALDTGTSITGPTTEIRALHAAIGGI 319
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      293 PFDSEKHY-VSCFATKYLPSTFTTIFGIKYPMTARAYTFKDSRG---RCYSAPKENTV-RT 347
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      320 PLLAGEVIILCSEIPKLPVASFLLGGVWFNLTAHDYVIQTTRNGVRLCLSGFQALDVPPP 379
      || : : : || : : : || : : : || : : : || : : : || : : : ||

QY      348 SRETWIIIGDAFLRYFSVDFRG----NDRIGLARA 378
      || : : : || : : : || : : : || : : : || : : : || : : : ||
Db      380 AGPPWIIIGDVFGLTYVAVDFDRGDKSSARVGLARA 414
      || : : : || : : : || : : : || : : : || : : : || : : : ||

```

[illegible]

Pending Nucleic Acid and/or Pending Amino Acid database searches now generate two sets of results. These databases were split into two parts to reduce the time needed to update the databases daily. The split freed up more machine time for processing searches.

Searches run against the Nucleic Acid Pending database produce two sets of results, with the extensions, **.rnpm** and **.rnpn**

Searches run against the Amino Acid Pending database produce two sets of results, with the extensions, **.rapm** and **.rapn**

The Pending database search results should not be left in the case because they contain data that is confidential.

GenCore version 5.1.4_p5.4578
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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:41:56 ; Search time 145 Seconds
(without alignments)
1685.199 Million cell updates/sec

Title: US-09-273-164-32

Perfect score: 2008

Sequence: 1 MKWIVLLGLVAFSECVIKIP.....RRYFVDFGRGNDRIGLARAV 379

Scoring table: BLOSUM62

Gapop 10.0 , gapext 0.5

Searched: 4569144 seqs, 644733110 residues

Total number of hits satisfying chosen parameters: 4569144

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Pending Patents_AA_Main:*

- 1: /cgn2_6/ptodata/1/paa/PCTUS_COMB.pep.*
- 2: /cgn2_6/ptodata/1/paa/US06_COMB.pep.*
- 3: /cgn2_6/ptodata/1/paa/US07_COMB.pep.*
- 4: /cgn2_6/ptodata/1/paa/US080_COMB.pep.*
- 5: /cgn2_6/ptodata/1/paa/US081_COMB.pep.*
- 6: /cgn2_6/ptodata/1/paa/US082_COMB.pep.*
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- 8: /cgn2_6/ptodata/1/paa/US084_COMB.pep.*
- 9: /cgn2_6/ptodata/1/paa/US085_COMB.pep.*
- 10: /cgn2_6/ptodata/1/paa/US086_COMB.pep.*
- 11: /cgn2_6/ptodata/1/paa/US087_COMB.pep.*
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- 16: /cgn2_6/ptodata/1/paa/US092_COMB.pep.*
- 17: /cgn2_6/ptodata/1/paa/US093_COMB.pep.*
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- 21: /cgn2_6/ptodata/1/paa/US097_COMB.pep.*
- 22: /cgn2_6/ptodata/1/paa/US098_COMB.pep.*
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- 24: /cgn2_6/ptodata/1/paa/US100_COMB.pep.*
- 25: /cgn2_6/ptodata/1/paa/US101_COMB.pep.*
- 26: /cgn2_6/ptodata/1/paa/US102_COMB.pep.*
- 27: /cgn2_6/ptodata/1/paa/US60_COMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	2008	100.0	379	16	US-09-273-164-32
2	2008	100.0	379	21	US-09-791-537-75815
3	2008	100.0	379	27	US-60-106-188-32
4	1983	98.8	379	16	US-09-273-164-42
5	1983	98.8	379	27	US-60-106-188-42
6	1571.5	78.3	380	16	US-09-273-164-46

Query Match 100.0%; Score 2008; DB 16; Length 379;
Best Local Similarity 100.0%; Pred. No. 5.3e-208;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKWIVLLGLVAFSECVIKIP...RRYFVDFGRGNDRIGLARAV...
|||||

ALIGNMENTS

RESULT 1

US-09-273-164-32
; Sequence 32, Application US/09273164

; GENERAL INFORMATION:

; APPLICANT: Roberts, R. Michael

; APPLICANT: Green, Jonathan

; APPLICANT: Xie, Sancel

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS

; FILE REFERENCE: UVM0003/UVM0003p

; CURRENT APPLICATION NUMBER: US/09/273,164

; CURRENT FILING DATE: 1999-03-19

; EARLIER APPLICATION NUMBER: 60/078,783

; EARLIER FILING DATE: 1998-03-20

; EARLIER FILING DATE: 1998-10-28

; NUMBER OF SEQ ID NOS: 56

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 32

; LENGTH: 379

; TYPE: PRT

; ORGANISM: bovidae

US-09-273-164-32

Sequence 53214, A
Sequence 46, Appl
Sequence 24, Appl
Sequence 82253, A
Sequence 24, Appl
Sequence 120793,
Sequence 26, Appl
Sequence 26, Appl
Sequence 48, Appl
Sequence 53240, A
Sequence 54, Appl
Sequence 53247, A
Sequence 44, Appl
Sequence 53212, A
Sequence 44, Appl
Sequence 50, Appl
Sequence 53243, A
Sequence 50, Appl
Sequence 56, Appl
Sequence 53249, A
Sequence 52, Appl
Sequence 53245, A
Sequence 52, Appl
Sequence 40, Appl
Sequence 40, Appl
Sequence 29, Appl
Sequence 139341,
Sequence 29, Appl
Sequence 110497,
Sequence 110495,
Sequence 73207, A
Sequence 73206, A
Sequence 28, Appl
Sequence 75807, A
Sequence 28, Appl
Sequence 64506, A

Db 1 MKWIVLLGLVAFSECVKIPRLQVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLT 60
Qy 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Db 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Qy 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Db 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Qy 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
Db 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
Qy 241 AGEWRVHMDRISMKTIVTACSDGCEALVHTGTSHTGEGPRLVNNHRLIRTPFDSKHV 300
Db 241 AGEWRVHMDRISMKTIVTACSDGCEALVHTGTSHTGEGPRLVNNHRLIRTPFDSKHV 300
Qy 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Db 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Qy 361 RYFSVFDGRNDRIGLARAV 379
Db 361 RYFSVFDGRNDRIGLARAV 379

RESULT 2

US-09-791-537-75815
; Sequence 75815, Application US/09791537
; GENERAL INFORMATION:
; APPLICANT: Bionomix, Inc.
; APPLICANT: Debe, Derek
; APPLICANT: Danzer, Joseph
; TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBERS
; FILE REFERENCE: 261/210
; CURRENT APPLICATION NUMBER: US/09/791,537
; CURRENT FILING DATE: 2001-02-22
; NUMBER OF SEQ ID NOS: 153055
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 75815
; LENGTH: 379
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-791-537-75815

Query Match 100.0%; Score 2008; DB 21; Length 379;
Best Local Similarity 100.0%; Pred. No. 5.3e-208;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWIVLLGLVAFSECVKIPRLQVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLVAFSECVKIPRLQVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLT 60
Qy 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Db 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Qy 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Db 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Qy 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
Db 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
Qy 241 AGEWRVHMDRISMKTIVTACSDGCEALVHTGTSHTGEGPRLVNNHRLIRTPFDSKHV 300
Db 241 AGEWRVHMDRISMKTIVTACSDGCEALVHTGTSHTGEGPRLVNNHRLIRTPFDSKHV 300
Qy 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Db 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360

Db 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Qy 361 RYFSVFDGRNDRIGLARAV 379
Db 361 RYFSVFDGRNDRIGLARAV 379
RESULT 3
US-60-106-188-32
; Sequence 32, Application US/60106188
; GENERAL INFORMATION:
; APPLICANT: Roberts, R. Michael
; APPLICANT: Green, Jonathan
; APPLICANT: Xie, Sancel
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM003P22
; CURRENT APPLICATION NUMBER: US/60/106,188
; CURRENT FILING DATE: 1998-10-28
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 32
; LENGTH: 379
; TYPE: PRT
; ORGANISM: bovidae
US-60-106-188-32

Query Match 100.0%; Score 2008; DB 27; Length 379;
Best Local Similarity 100.0%; Pred. No. 5.3e-208;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWIVLLGLVAFSECVKIPRLQVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLVAFSECVKIPRLQVKTMRKTLGKKNLKNFLKEHPYRLSQISFRGSNLT 60
Qy 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Db 61 HPLRNIMLVVGNITIGTPQEFQVVDGTSSDLWVFSFCTMPACSAFVWFRQLQSSTF 120
Qy 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Db 121 OPTNKTFTITYGSGSMKGFAYDVRIGDLVSTDPQFGLSVVVEYGLEGRNVDVGLNYP 180
Qy 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
Db 181 NISFSGAIPFDNLKNOCAISEPVFAFYLKSKNKGVSVMFGVDHGYKKGELNWIPLIE 240
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Db 241 AGEWRVHMDRISMKTIVTACSDGCEALVHTGTSHTGEGPRLVNNHRLIRTPFDSKHV 300
Qy 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Db 301 SCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFLR 360
Qy 361 RYFSVFDGRNDRIGLARAV 379
Db 361 RYFSVFDGRNDRIGLARAV 379

RESULT 4

US-09-273-164-42
; Sequence 42, Application US/09273164
; GENERAL INFORMATION:
; APPLICANT: Roberts, R. Michael
; APPLICANT: Green, Jonathan
; APPLICANT: Xie, Sancel
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM003/UVM0003P
; CURRENT APPLICATION NUMBER: US/09/273,164
; CURRENT FILING DATE: 1999-03-19
; EARLIER APPLICATION NUMBER: 60/078,783
; EARLIER FILING DATE: 1998-03-20
; EARLIER APPLICATION NUMBER: 60/106,188

EARLIER FILING DATE: 1998-10-28
NUMBER OF SEQ ID NOS: 56
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 42
LENGTH: 379
TYPE: PRT
ORGANISM: bovidae
US-09-273-164-42

Query Match 98.8%; Score 1983; DB 16; Length 379;
Best Local Similarity 98.7%; Pred. No. 2.7e-205;
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MKWIVLLGLVAFSECIKIPURQVKTMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
DB 1 MKWIVLLGLMAFSECIQIPLRQVKTMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
QY 61 HPLRNIMNLVYVGNITIGTPPQEQVVDFTGSSDLWVPSFCTMPACSAFVWFRQLQSSTF 120
DB 61 HPLRNIMNLVYVGNITIGTPPQEQVVDFTGSSDLWVPSFCTMPACSAFVWFRQLQSSTF 120
QY 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVVEGLEGRNYDGLVGLNYP 180
DB 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVVEGLEGRNYDGLVGLNYP 180
QY 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQYKKGELNWIPLIE 240
DB 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQYKKGELNWIPLIE 240
QY 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSIEGPGRLVNNIHRILTRTPFDSKHV 300
DB 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSIEGPGRLVNNIHRILTRTPFDSKHV 300
QY 301 SCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
DB 301 SCFATNTLPSITFIINGIKYPMTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
QY 361 RYFSVDFDRGNDRIGLARAV 379
DB 361 RYFSVDFDRGNDRIGLARAV 379

RESULT 5

US-60-106-188-42
Sequence 42, Application US/60106188
GENERAL INFORMATION:
APPLICANT: Roberts, R. Michael
APPLICANT: Green, Jonathan
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
FILE REFERENCE: UYMO003P22
CURRENT APPLICATION NUMBER: US/60/106,188
CURRENT FILING DATE: 1998-10-28
NUMBER OF SEQ ID NOS: 56
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 42
LENGTH: 379
TYPE: PRT
ORGANISM: bovidae
US-60-106-188-42

Query Match 98.8%; Score 1983; DB 27; Length 379;
Best Local Similarity 98.7%; Pred. No. 2.7e-205;
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MKWIVLLGLVAFSECIKIPURQVKTMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
DB 1 MKWIVLLGLMAFSECIQIPLRQVKTMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
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DB 61 HPLRNIMNLVYVGNITIGTPPQEQVVDFTGSSDLWVPSFCTMPACSAFVWFRQLQSSTF 120

QY 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVVEGLEGRNYDGLVGLNYP 180
DB 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVVEGLEGRNYDGLVGLNYP 180
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DB 241 AGEWRVHMDRISMKRTVIACSDGCEALVHTGTSIEGPGRLVNNIHRILTRTPFDSKHV 300
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DB 301 SCFATNTLPSITFIINGIKYPMTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFLR 360
QY 361 RYFSVDFDRGNDRIGLARAV 379
DB 361 RYFSVDFDRGNDRIGLARAV 379

RESULT 6

US-09-273-164-46
Sequence 46, Application US/09273164
GENERAL INFORMATION:
APPLICANT: Roberts, R. Michael
APPLICANT: Green, Jonathan
APPLICANT: Xie, Sancel
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
FILE REFERENCE: UYMO003/UYMO003P
CURRENT APPLICATION NUMBER: US/09/273,164
CURRENT FILING DATE: 1999-03-19
EARLIER APPLICATION NUMBER: 60/078,783
EARLIER FILING DATE: 1998-03-20
EARLIER APPLICATION NUMBER: 60/106,188
EARLIER FILING DATE: 1998-10-28
NUMBER OF SEQ ID NOS: 56
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 46
LENGTH: 380
TYPE: PRT
ORGANISM: bovidae
US-09-273-164-46

Query Match 78.3%; Score 1571.5; DB 16; Length 380;
Best Local Similarity 78.2%; Pred. No. 1.2e-160;
Matches 297; Conservative 31; Mismatches 51; Indels 1; Gaps 1;

QY 1 MKWIVLLGLVAFSECIKIPURQVKTMRKTLGKKNMLKFLKEHPYRLSQISFRGSNLT 60
DB 1 MKWIVLLGLVAFSECIKIPURQVKTMRKTLGKKNMLKFLKEHPYRLSHISFRGSNLT 60
QY 61 HPLRNIMNLVYVGNITIGTPPQEQVVDFTGSSDLWVPS-FCMPACSAFVWFRQLQSST 119
DB 61 LPLRNIRDMLYVGNITIGTPPQEQVVDFTGSSDLWVPSDFCTSPACSTHVRFRHFQSS 120
QY 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVVEGLEGRNYDGLVGLN 179
DB 121 FRPTTKTFTIYSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLSRRFDGILGN 180
QY 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHQYKKGELNWIPLI 239
DB 181 PNLSFSGAIPFDNLKNOGAISDPIFAFYLSKDKREGSVVMFGVDHRYKYKGEINWVPLI 240
QY 240 EAGEWRVHMDRISMKRTVIACSDGCEALVHTGTSIEGPGRLVNNIHRILTRTPFDSKHV 299
DB 241 RAGDWIVHVDITMRKREVIACSDGCAALVDVTGSLIQGGPGRVIDNHKLIGATPRGSKHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMTARAYIFKDSGRGCYSAFKENTVRTSRETWILGDAFL 359
DB 301 VSCSVNTLPSITFIINGIKYPMPAYIYKDSRGVCIYAFKQORVRRSTESWLLGDVFL 360
QY 360 RRYFSVDFDRGNDRIGLARAV 379

[illegible]

Db 121 FRLNKTFRITYGSGRMKGVVVDVTRIGNLVSTDDQPFGLSIEBYEGFGRIVDGVGLGNY 180
QY 180 PNISFGAIPFDNLKNOGAISEVPFAFYLSKNKOBGSVMFVGVDHGYKQELNWIPLI 239
Db 181 PNISFGAIPFDNLKNOGAISEVPFAFYLSKDEGREGSVVMFVGVDHGYKQELNWIPLI 240
QY 240 EAGWRVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 299
Db 241 QAGDWSVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 300
QY 300 VSCFATKPLSITFIINGIKYPMATRAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFL 359
Db 301 VPCSEVNTLPSIVFTINGINYPVPGRAYILKDDRGRCYTTFQENRVSSSTETWILGDVFL 360
QY 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RLYFSVDFDRGNDRIGLARAV 380

RESULT 10
US-09-791-537-82253
; Sequence 82253, Application US/09791537
; GENERAL INFORMATION:
; APPLICANT: Bionomix, Inc.
; APPLICANT: Debe, Derek
; APPLICANT: Danzer, Joseph
; TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBERS
; FILE REFERENCE: 261/210
; CURRENT APPLICATION NUMBER: US/09/791.537
; CURRENT FILING DATE: 2001-02-22
; NUMBER OF SEQ ID NOS: 153055
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 82253
; LENGTH: 380
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-791-537-82253

Query Match 77.7%; Score 1559.5; DB 21; Length 380;
Best Local Similarity 78.2%; Pred. No. 2.3e-159;
Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

QY 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKGNMLNFKLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKGNMLNFKLKEHAYSLQISFRGSNLTI 60
QY 61 HPLRNIMLVYGNITIGTPPOEFQVVDTSDDLWVPS-FCITMPACAPVWFRQLQST 119
Db 61 HPLRNKIDLVYGNITIGTPPOEFQVVDTSDDLWVPSDFCTSPACSTHVRFRHLQST 120
QY 120 FQPTNKTFTITYGSGMKGFAYDTRIGDLVSTDDQPFGLSVVEYGLEGRNVDGVGLGNY 179
Db 121 FRLNKTFRITYGSGRMKGVVVDVTRIGNLVSTDDQPFGLSIEBYEGFGRIVDGVGLGNY 180
QY 180 PNISFGAIPFDNLKNOGAISEVPFAFYLSKNKOBGSVMFVGVDHGYKQELNWIPLI 239
Db 181 PNISFGAIPFDNLKNOGAISEVPFAFYLSKDEGREGSVVMFVGVDHGYKQELNWIPLI 240
QY 240 EAGWRVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 299
Db 241 QAGDWSVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 300
QY 300 VSCFATKPLSITFIINGIKYPMATRAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFL 359
Db 301 VPCSEVNTLPSIVFTINGINYPVPGRAYILKDDRGRCYTTFQENRVSSSTETWILGDVFL 360
QY 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RLYFSVDFDRGNDRIGLARAV 380

RESULT 11

US-60-106-188-24
; Sequence 24, Application US/60106188
; GENERAL INFORMATION:
; APPLICANT: Roberts, R. Michael
; APPLICANT: Green, Jonathan
; APPLICANT: Xie, Sancel
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM003P22
; CURRENT APPLICATION NUMBER: US/60/106,188
; CURRENT FILING DATE: 1998-10-28
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 24
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
US-60-106-188-24

Query Match 77.7%; Score 1559.5; DB 27; Length 380;
Best Local Similarity 78.2%; Pred. No. 2.3e-159;
Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

QY 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKGNMLNFKLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWLVLLGLVAFSECIKIPRLQVKTMRKTLGSKGNMLNFKLKEHAYSLQISFRGSNLTI 60
QY 61 HPLRNIMLVYGNITIGTPPOEFQVVDTSDDLWVPS-FCITMPACAPVWFRQLQST 119
Db 61 HPLRNKIDLVYGNITIGTPPOEFQVVDTSDDLWVPSDFCTSPACSTHVRFRHLQST 120
QY 120 FQPTNKTFTITYGSGMKGFAYDTRIGDLVSTDDQPFGLSVVEYGLEGRNVDGVGLGNY 179
Db 121 FRLNKTFRITYGSGRMKGVVVDVTRIGNLVSTDDQPFGLSIEBYEGFGRIVDGVGLGNY 180
QY 180 PNISFGAIPFDNLKNOGAISEVPFAFYLSKNKOBGSVMFVGVDHGYKQELNWIPLI 239
Db 181 PNISFGAIPFDNLKNOGAISEVPFAFYLSKDEGREGSVVMFVGVDHGYKQELNWIPLI 240
QY 240 EAGWRVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 299
Db 241 QAGDWSVHMDRISMKRVIAACDCEALVHTGTHIEGPGRLVNNIHLIRTRPFDSEHY 300
QY 300 VSCFATKPLSITFIINGIKYPMATRAYIFKDSRGRCYSAPKENTVRTSRETWILGDAFL 359
Db 301 VPCSEVNTLPSIVFTINGINYPVPGRAYILKDDRGRCYTTFQENRVSSSTETWILGDVFL 360
QY 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RLYFSVDFDRGNDRIGLARAV 380

RESULT 12
US-09-791-537-120793
; Sequence 120793, Application US/09791537
; GENERAL INFORMATION:
; APPLICANT: Bionomix, Inc.
; APPLICANT: Debe, Derek
; APPLICANT: Danzer, Joseph
; TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY ME
; FILE REFERENCE: 261/210
; CURRENT APPLICATION NUMBER: US/09/791,537
; CURRENT FILING DATE: 2001-02-22
; NUMBER OF SEQ ID NOS: 153055
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 120793
; LENGTH: 378
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-791-537-120793

Query Match 77.3%; Score 1553; DB 21; Length 378;
Best Local Similarity 79.4%; Pred. No. 1.2e-158;

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0003/UVM0003P
; CURRENT APPLICATION NUMBER: US/09/273,164
; CURRENT FILING DATE: 1999-03-19
; EARLIER APPLICATION NUMBER: 60/078,783
; EARLIER FILING DATE: 1998-03-20
; EARLIER APPLICATION NUMBER: 60/106,188
; EARLIER FILING DATE: 1998-10-28
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
; US-09-273-164-48

Query Match 76.3%; Score 1532.5; DB 16; Length 380;
Best Local Similarity 77.6%; Pred. No. 2e-156;
Matches 295; Conservative 25; Mismatches 59; Indels 1; Gaps 1;

QY	1	MKWIVLGLVAFSECIYKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT	60
Db	1	MKWLVLGLVAFSECIYKIPLRQVKTMRKTLGSKNMLKFLKEHTYLSQISSRGSNLT	60
QY	61	HPLRNIMNLVVGNTITGTPQEFQVVDGSSDLWVPS-FCTMPACGAPVWFRQLOSST	119
Db	61	HPLRNIMNLVVGNTITGTPQEFQVVDGSSDLWVPS-FCTMPACGAPVWFRQLOSST	120
QY	120	FQPTNKTFTITYGSGSMKGLAYDVTVRIGDLVSTDQDFGLSVVVEYGLEGRNYDGVGLNY	179
Db	121	FRHTQVFNKYNKTRGMKGLLVYDVTVRIGDLVSTDQDFGLSVVVEYGLEGRNYDGVGLNY	180
QY	180	PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQEGSVWVFGVDHQYKYGELNWIPLI	239
Db	181	PNMSFSGAIPFDNLKNEGAISEPVFAFYLSKDKREGSVWVFGVDHRYKYGELNWIPLI	240
QY	240	EAGEWRVHMDRISMKRVVIACSDGCEALVHTGTSHIEGPGRLVNNIHLIRTRPFDKHY	299
Db	241	QAGGWTVHVDRIKMKRIIACSGCEALVDTGTALIKPRRLVNNIQLIGTTPRGSKHY	300
QY	300	VSCFATKYLPSITFIINGIKYPMFARAYIFKDSRGCSYAFKENTVRTSRETWILGDAFL	359
Db	301	VSCSVNLTLSIIFTINGINYPARAYILKDESNCTTTFKENTVRTSRETWILGDVFP	360
QY	360	RYFSVFDGRGNDRIGLARAV	379
Db	361	RLYFSVFDGRGNDRIGLARAV	380

Search completed: April 2, 2003, 17:48:10
Job time : 147 secs

GenCore version 5.1.4_p5.4578
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OM protein - protein search, using sw model

Run on: April 2, 2003, 17:45:45 ; Search time 31 Seconds
(without alignments)
1766.151 Million cell updates/sec

Title: US-09-273-164-32

Perfect score: 2008

Sequence: 1 MKWIVLLGLVAFSECTVKTIP.....RRYFVFDRCNDRIGLARAV 379

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 656186 seqs, 144460914 residues

Total number of hits satisfying chosen parameters: 656186

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Pending_Patents_AA_New:*

- 1: /cgn2_6/ptodata/2/paa/PCT_NEW_COMB.pep.*
- 2: /cgn2_6/ptodata/2/paa/US06_NEW_COMB.pep.*
- 3: /cgn2_6/ptodata/2/paa/US07_NEW_COMB.pep.*
- 4: /cgn2_6/ptodata/2/paa/US08_NEW_COMB.pep.*
- 5: /cgn2_6/ptodata/2/paa/US09_NEW_COMB.pep.*
- 6: /cgn2_6/ptodata/2/paa/US10_NEW_COMB.pep.*
- 7: /cgn2_6/ptodata/2/paa/US60_NEW_COMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	2008	100.0	379	1	PCT-US02-37236A-32 Sequence 32, Appl
2	1983	98.8	379	1	PCT-US02-37236A-42 Sequence 42, Appl
3	1571.5	78.3	380	1	PCT-US02-37236A-46 Sequence 46, Appl
4	1559.5	77.7	380	1	PCT-US02-37236A-24 Sequence 24, Appl
5	1553	77.3	381	1	PCT-US02-37236A-26 Sequence 26, Appl
6	1532.5	76.3	380	1	PCT-US02-37236A-48 Sequence 48, Appl
7	1529.5	76.2	380	1	PCT-US02-37236A-54 Sequence 54, Appl
8	1526.5	76.0	380	1	PCT-US02-37236A-44 Sequence 44, Appl
9	1526	76.0	381	1	PCT-US02-37236A-50 Sequence 50, Appl
10	1511.5	75.3	380	1	PCT-US02-37236A-56 Sequence 56, Appl
11	1508.5	75.1	380	1	PCT-US02-37236A-52 Sequence 52, Appl
12	1505.5	75.0	380	1	PCT-US02-37236A-40 Sequence 40, Appl
13	1484	73.9	379	1	PCT-US02-37236A-29 Sequence 29, Appl
14	1449.5	72.2	377	1	PCT-US02-37236A-28 Sequence 28, Appl
15	1388.5	69.1	380	1	PCT-US02-37236A-27 Sequence 27, Appl
16	1368.5	68.2	392	1	PCT-US02-37236A-37 Sequence 37, Appl
17	1298	64.6	341	1	PCT-US02-37236A-30 Sequence 30, Appl
18	1157.5	57.6	375	1	PCT-US02-37236A-35 Sequence 35, Appl
19	1151.5	57.3	391	1	PCT-US02-37236A-36 Sequence 36, Appl
20	1148.5	57.2	376	1	PCT-US02-37236A-25 Sequence 25, Appl
21	1105.5	55.1	376	1	PCT-US02-37236A-34 Sequence 34, Appl
22	1086.5	54.1	380	1	PCT-US02-37236A-33 Sequence 33, Appl
23	1044.5	52.0	388	1	PCT-US02-37236A-38 Sequence 38, Appl
24	1001	49.9	387	1	PCT-US02-37236A-31 Sequence 31, Appl
25	923.5	46.0	388	6	US-10-074-978A-128 Sequence 128, App
26	918.5	45.7	388	6	US-10-074-978A-129 Sequence 129, App

ALIGNMENTS

RESULT 1

PCT-US02-37236A-32

; Sequence 32, Application PC/TUS0237236A

; GENERAL INFORMATION:

; APPLICANT: Lucy, Matthew C.

; APPLICANT: Mathialagan, Nagappan

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSI

; FILE REFERENCE: UVM0019W0

; CURRENT APPLICATION NUMBER: PCT/US02/37236A

; CURRENT FILING DATE: 2002-11-20

; PRIOR APPLICATION NUMBER: 60/331,822

; PRIOR FILING DATE: 2001-11-20

; NUMBER OF SEQ ID NOS: 56

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 32

; LENGTH: 379

; TYPE: PRT

; ORGANISM: bovidae

PCT-US02-37236A-32

Query Match 100.0%; Score 2008; DB 1; Length 379;

Best Local Similarity 100.0%; Pred. No. 6.5e-190;

Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	MKWIVLLGLVAFSECTVKTIPLRQVKTMKRTLSGKNMLKNFLKEHPYRLSQISFRGSLTI	60
Db	1	MKWIVLLGLVAFSECTVKTIPLRQVKTMKRTLSGKNMLKNFLKEHPYRLSQISFRGSLTI	60
Qy	61	HLRIMNLVYVGNITIGTPPOEFQVVDGSSDLWVPSCFTMPACSAVPWFQLOSSTF	120
Db	61	HLRIMNLVYVGNITIGTPPOEFQVVDGSSDLWVPSCFTMPACSAVPWFQLOSSTF	120
Qy	121	QPTNKTFTITYGSGMKGFLAYDVTVRIGDLVSTDQDFGLSVVEYGLEGRNYDGVGLNYP	180
Db	121	QPTNKTFTITYGSGMKGFLAYDVTVRIGDLVSTDQDFGLSVVEYGLEGRNYDGVGLNYP	180
Qy	181	NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHQYKGLNWIPLIE	240
Db	181	NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVFGVDHQYKGLNWIPLIE	240
Qy	241	AGEWRVHMDRISMKTIVTACSDGCEALVHTGSHIEGPGRLVNNIHRILTRTPFDSKHVV	300
Db	241	AGEWRVHMDRISMKTIVTACSDGCEALVHTGSHIEGPGRLVNNIHRILTRTPFDSKHVV	300
Qy	301	SCFATKYLPSITFIINGIKYPMPTARAYIFKDSGRGRCYSFAKENTVTSRETWILGDAFLR	360
Db	301	SCFATKYLPSITFIINGIKYPMPTARAYIFKDSGRGRCYSFAKENTVTSRETWILGDAFLR	360
Qy	361	RYFSVFDRCNDRIGLARAV	379

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Db 361 RYFSVDFDRGNDRIGLARAV 379
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RESULT 2
PCT-US02-37236A-42
; Sequence 42, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; PRIOR FILING DATE: 2002-11-20
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 42
; LENGTH: 379
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-42

Query Match 98.8%; Score 1983; DB 1; Length 379;
Best Local Similarity 98.7%; Pred. No. 1.9e-187;
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLMAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60

Qy 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 120
Db 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 120

Qy 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 180
Db 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 180

Qy 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLIE 240
Db 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLIE 240

Qy 241 AGEWRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 300
Db 241 AGEWRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 300

Qy 301 SCFATKYLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFLR 360
Db 301 SCFATNTLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFLR 360

Qy 361 RYFSVDFDRGNDRIGLARAV 379
Db 361 RYFSVDFDRGNDRIGLARAV 379
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RESULT 3
PCT-US02-37236A-46
; Sequence 46, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; PRIOR FILING DATE: 2002-11-20
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 46
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-46

Query Match 98.8%; Score 1983; DB 1; Length 379;
Best Local Similarity 98.7%; Pred. No. 1.9e-187;
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLMAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60

Qy 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 120
Db 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 120

Qy 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 180
Db 121 OPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 180

Qy 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLIE 240
Db 181 NISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLIE 240

Qy 241 AGEWRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 300
Db 241 AGEWRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 300

Qy 301 SCFATKYLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFLR 360
Db 301 SCFATNTLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFLR 360

Qy 361 RYFSVDFDRGNDRIGLARAV 379
Db 361 RYFSVDFDRGNDRIGLARAV 379
|||||

RESULT 4
PCT-US02-37236A-24
; Sequence 24, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; PRIOR FILING DATE: 2002-11-20
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 24
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-24

Query Match 77.7%; Score 1559.5; DB 1; Length 380;
Best Local Similarity 78.2%; Pred. No. 1.4e-145;
Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

Qy 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60

Qy 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119
Db 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119

Qy 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179
Db 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179

Qy 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLESRFRDGLNYP 180
Db 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLESRFRDGLNYP 180
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; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-46

Query Match 78.3%; Score 1571.5; DB 1; Length 380;
Best Local Similarity 78.2%; Pred. No. 9e-147;
Matches 297; Conservative 31; Mismatches 51; Indels 1; Gaps 1;

Qy 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60

Qy 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119
Db 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119

Qy 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179
Db 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179

Qy 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLESRFRDGLNYP 180
Db 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSMAEYGLESRFRDGLNYP 180

Qy 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 239
Db 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNKQEGSVVMFGVDHGYKGLNWIPLI 239

Qy 240 EAGENRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 299
Db 240 EAGENRVHMDRISMRTVIACSDGCEALVHTGTSHTIEGPGRLVNNIHLIRTPFDSKHV 299

Qy 241 RAGDWIVHVDRTMKREVACSDGCAALVDVTGSLQGGPGRVIDNHLKLGATPRGSKHY 300
Db 241 RAGDWIVHVDRTMKREVACSDGCAALVDVTGSLQGGPGRVIDNHLKLGATPRGSKHY 300

Qy 300 VSCFATKYLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFL 359
Db 300 VSCFATKYLPSITFTINGIKYPMTARAYIFKDSGRGCSYSAFKENTVRTSRETWILGDAFL 359

Qy 360 RYFSVDFDRGNDRIGLARAV 379
Db 360 RYFSVDFDRGNDRIGLARAV 379
|||||

RESULT 4
PCT-US02-37236A-24
; Sequence 24, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; PRIOR FILING DATE: 2002-11-20
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 24
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-24

Query Match 77.7%; Score 1559.5; DB 1; Length 380;
Best Local Similarity 78.2%; Pred. No. 1.4e-145;
Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

Qy 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60
Db 1 MKWIVLLGLVAFSECIKIPLRQVKTMRKTLGSKNMLKFLKEHPYRLSQISFRGSNLT 60

Qy 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119
Db 61 HPLRNIMNLVYVGNITIGTPQEFQVVDGSSDLWVPSFCTMPACSAVPWFRQSQST 119

Qy 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179
Db 120 FQPTNKTFTITYGSGMKGFAYDVTVRIGDLVSTDPQFGLSVVEYGLEGRNDYDGLNYP 179

Qy 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSIEYEGFEGRIYDGLNYP 180
Db 121 FRLTNKTFTITYGSGRMKGVAHDVTVRIGNLVSTDPQFGLSIEYEGFEGRIYDGLNYP 180
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Qy	180	PNISFSGAIP	IFPNLNKQCAISEP	PAFYLSKNQ	BGSVMF	GGVDHYYK	EGLNWIPL	239
Db	181	PNISFSGAIP	IFDKLNQRAISEP	PAFYLSKDR	BGSVMF	GGVDHRYE	EGLNWIPL	240
Qy	240	EAGEWRVHMDR	ISMKKTVTACSD	GCEALVHTGT	SHTEGPR	LNVNTHRL	IRTPPDSKHY	299
Db	241	QAGDWSVHMDR	ISIEKRIITACSD	CCALVDVTGT	SDIVGPR	LNVNTHRL	ILIGAIPRGS	300
Qy	300	VSCFATKYLPS	FTIIFINGIKYPM	TARAYIFKDS	RGRCYSAFK	NETVRTS	RETWILGDAPL	359
Db	301	VPCSEVNTLPS	IVFTINGINYPVP	GRAYILKDDR	GRCYTTFQEN	RVSSSTET	WTWILGDVPL	360
Qy	360	RRYFSVFDGR	NDRIGLARAV	379				
Db	361	RLYFSVFDGR	NDRIGLARAV	380				

RESULT 5
 PCT-US02-37236A-26
 ; Sequence 26, Application PC/TUS0237236A
 ; GENERAL INFORMATION:
 ; APPLICANT: Lucy, Matthew C.
 ; APPLICANT: Mathialagan, Nagappan
 ; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
 ; FILE REFERENCE: UYMO019W0
 ; CURRENT APPLICATION NUMBER: PCT/US02/37236A
 ; CURRENT FILING DATE: 2002-11-20
 ; PRIOR APPLICATION NUMBER: 60/331,822
 ; PRIOR FILING DATE: 2001-11-20
 ; NUMBER OF SEQ ID NOS: 56
 ; SOFTWARE: PatentIn ver. 2.0
 ; SEQ ID NO 26
 ; LENGTH: 381
 ; TYPE: prt
 ; ORGANISM: bovidae
 PCT-US02-37236A-26

RESULT 6
PCT-US02-37236A-48
: Sequence 48, Application PC/TUS0237236A

```

; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UVM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; CURRENT FILING DATE: 2002-11-20
; PRIOR APPLICATION NUMBER: 60/331,822
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-48

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RESULT 7
PCT-US02-37236A-54
; Sequence 54, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UPM001940
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; CURRENT FILING DATE: 2002-11-20
; PRIOR APPLICATION NUMBER: 60/331,822
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 54
; LENGTH: 380
; TYPE: prt
; ORGANISM: bovidae
PCT-US02-37236A-54

```

Query Match 76.2%; Score 1529.5; DB 1; Length 380;
Best Local Similarity 76.1%; Pred. No. 1.3e-142;
Matches 289; Conservative 31; Mismatches 59; Indels 1; Gaps 1;

; PRIOR APPLICATION NUMBER: 60/331,822
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 56
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-56

Query Match 75.3%; Score 1511.5; DB 1; Length 380;
Best Local Similarity 76.6%; Pred. No. 7.6e-141;
Matches 291; Conservative 30; Mismatches 58; Indels 1; Gaps 1;

Qy 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Qy 61 HPLRNIMNLVYVGNITIGTPPOEQVVDFTGSSDLWVPS-FCTMPACSAWVFRQLOSST 119
Db 61 LPLRNIEDLMVGNITIGTPPOEQVVDFTGSSDFWPSDFCTSPDCITHVRFHQHQSST 120
Qy 120 FQPTNKTFITYGSGMKGLAYDVRIGDLVSTQDPFGLSVVEYGLEGRNDYGVGLGNY 179
Db 121 FRPNTKTFITYGSGMRGVVHTVRIGDLVSTQDPFGLSVSEYGFKDRAYDGLGNY 180
Qy 180 PNISFSGAIPFDNLKNOGAISEPFAFYLSKNKQEGSVVMFGVDHRYKGLNWIPLI 239
Db 181 PDESFAIPFDNLKNOGAISEPFAFYLSKNKQEGSVVMFGVDHRYKGLNWIPLI 240
Qy 240 EAGEWRVHMDRISMKRVVIACSDCEALVHTGTSHEGPGRLVNNIHLIRTPFDSKHY 299
Db 241 EGDWVRMDGISMKTWVACSDCEAVDVTGSLIKPRKLVNKIQKLIGATPRGSKHY 300
Qy 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
Db 301 VYCSAVNALPSITFIINGINPVPARAYILKDSRGRCYFAKORFSSSTETWILGDAFL 360
Qy 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RRYFSVDFDRGNDRIGLARAV 380

RESULT 11
PCT-US02-37236A-52
; Sequence 52, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UWM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; CURRENT FILING DATE: 2002-11-20
; PRIOR APPLICATION NUMBER: 60/331,822
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 52
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-52

Query Match 75.1%; Score 1508.5; DB 1; Length 380;
Best Local Similarity 75.8%; Pred. No. 1.5e-140;
Matches 288; Conservative 33; Mismatches 58; Indels 1; Gaps 1;

Qy 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Qy 61 HPLRNIMNLVYVGNITIGTPPOEQVVDFTGSSDLWVPS-FCTMPACSAWVFRQLOSST 119
Db 61 HPLRNIMNLVYVGNITIGTPPOEQVVDFTGSSDLWVPS-FCTMPACSAWVFRQLOSST 119

Db 61 HPLRNIMNLVYVGNITIGTPPOEQVVDFTGSSDLWVPSDFCTSPCCSKHVRHQLQSST 120
Qy 120 FQPTNKTFITYGSGMKGLAYDVRIGDLVSTQDPFGLSVVEYGLEGRNDYGVGLGNY 179
Db 121 FRPNTKTFITYGSGRIKGVVAHDVIRIGDLVSTQDPFSLMAEYGLEHIPDGIILGNY 180
Qy 180 PNISFSGAIPFDNLKNOGAISEPFAFYLSKNKQEGSVVMFGVDHRYKGLNWIPLI 239
Db 181 PNVSSGAIPFDNLKNOGAISEPFAFYLSKNKQEGSVVMFGVDHRYKGLNWIPLI 240
Qy 240 EAGEWRVHMDRISMKRVVIACSDCEALVHTGTSHEGPGRLVNNIHLIRTPFDSKHY 299
Db 241 QAGNWIHMDISIERKVIACSGCVAFYDICTAFIEGPKPLVDNMQKLRAPWRSKHY 300
Qy 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
Db 301 VYCSAVNALPSITFIINGINPVPARAYILKDSRRRCYSTFEIPLSPTEFWMLGDVFL 360
Qy 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RRYFSVDFDRGNDRIGLARAV 380
RESULT 12
PCT-US02-37236A-40
; Sequence 40, Application PC/TUS0237236A
; GENERAL INFORMATION:
; APPLICANT: Lucy, Matthew C.
; APPLICANT: Mathialagan, Nagappan
; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS
; FILE REFERENCE: UWM0019W0
; CURRENT APPLICATION NUMBER: PCT/US02/37236A
; CURRENT FILING DATE: 2002-11-20
; PRIOR APPLICATION NUMBER: 60/331,822
; PRIOR FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 56
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 40
; LENGTH: 380
; TYPE: PRT
; ORGANISM: bovidae
PCT-US02-37236A-40

Query Match 75.0%; Score 1505.5; DB 1; Length 380;
Best Local Similarity 74.5%; Pred. No. 3e-140;
Matches 283; Conservative 39; Mismatches 57; Indels 1; Gaps 1;

Qy 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Db 1 MKWVLLGLVAFSECIKIPURVKTMRKTLGSKNMLNFKLKEHPYRLSQISFRGSNLTI 60
Qy 61 HPLRNIMNLVYVGNITIGTPPOEQVVDFTGSSDLWVPSF-CFMPACSAWVFRQLOSST 119
Db 61 HPLRNIRDIYVGNITIGTPPOEQVIFDFTGSSDLWVPSIDCNSTSCATHVRFHQLQSST 120
Qy 120 FQPTNKTFITYGSGMKGLAYDVRIGDLVSTQDPFGLSVVEYGLEGRNDYGVGLGNY 179
Db 121 FRPNTKTFITYGSGRMVGIAYDVRIGDLVSTQDPFGLSVVEYGFHAKRFGDGLGNY 180
Qy 180 PNISFSGAIPFDNLKNOGAISEPFAFYLSKNKQEGSVVMFGVDHRYKGLNWIPLI 239
Db 181 WNLWSKAMPFIEDKLKNEGAISEPFAFYLSKDKREGSVVMFGVDHRYKGLNWIPLI 240
Qy 240 EAGEWRVHMDRISMKRVVIACSDCEALVHTGTSHEGPGRLVNNIHLIRTPFDSKHY 299
Db 241 QAVDWSVHVDRIIMNREVACSEGCALVDTGSSNQGPRLLDNRIGATPRGSKHY 300
Qy 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRGRCYSFAKENTVTRTSRETWILGDAFL 359
Db 301 VYCSAVNALPSITFIINGINPVPPRAYILKDSRGHCYTTFEKRVRRRSTESWVLGEVFL 360
Qy 360 RRYFSVDFDRGNDRIGLARAV 379
Db 361 RRYFSVDFDRGNDRIGLARAV 379

Db 361 RLYFSVDFRGNDRIGLARAV 380

RESULT 13

PCT-US02-37236A-29

; Sequence 29, Application PC/TUS0237236A

; GENERAL INFORMATION:

; APPLICANT: Lucy, Matthew C.

; APPLICANT: Mathialagan, Nagappan

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS

; FILE REFERENCE: UVM0019W0

; CURRENT APPLICATION NUMBER: PCT/US02/37236A

; CURRENT FILING DATE: 2002-11-20

; PRIOR FILING DATE: 60/331,822

; NUMBER OF SEQ ID NOS: 56

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 29

; LENGTH: 379

; TYPE: PRT

; ORGANISM: bovidae

PCT-US02-37236A-29

Query Match 73.9%; Score 1484; DB 1; Length 379;

Best Local Similarity 74.7%; Pred. No. 4e-138;

Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;

Qy 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Db 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Qy 61 HPLRNIMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 119

Db 60 HPLRNIRDLFYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 119

Qy 120 FQPTNKTFITTYGSGMKGFAYDVTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 179

Db 120 FRPTNKTFITTYGSGMKGFAYDVTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 179

Qy 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQKQEGSVVFMFGVDHGYKGLNWIPLI 239

Db 180 PNKTFSGAIPFDNLKNOGAISEPVFAFYLSKNQKQEGSVVFMFGVDHGYKGLNWIPLI 239

Qy 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPRFDKHY 299

Db 240 QVGDWVHMDRITMKRVKVIACSGCKALVDGTSDIVGPTLVNWLKLRARPLGPQYF 299

Qy 300 VSCFATKYLPSITFTINGIKYPMATARAYIFKDSGRGCYSAFKENTVTSRETWILGDAFL 359

Db 300 VSCSAVNTLPSITFTINGINVLRLPARAYIHKDSRGRCYATAFKEHRFSSPIETWLLGDVFL 359

Qy 360 RRYFSVDFRGNDRIGLARAV 379

Db 360 RRYFSVDFRGNDRIGLARAV 379

RESULT 14

PCT-US02-37236A-28

; Sequence 28, Application PC/TUS0237236A

; GENERAL INFORMATION:

; APPLICANT: Lucy, Matthew C.

; APPLICANT: Mathialagan, Nagappan

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS

; FILE REFERENCE: UVM0019W0

; CURRENT APPLICATION NUMBER: PCT/US02/37236A

; CURRENT FILING DATE: 2002-11-20

; PRIOR FILING DATE: 60/331,822

; NUMBER OF SEQ ID NOS: 56

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 28

; LENGTH: 377

; TYPE: PRT

; ORGANISM: bovidae
PCT-US02-37236A-28

Query Match

Best Local Similarity 72.2%; Score 1449.5; DB 1; Length 377;

Matches 284; Conservative 25; Mismatches 66; Indels 3; Gaps 2;

Qy 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Db 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Qy 61 HPLRNIMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 119

Db 61 HPLRNIMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 119

Qy 120 FQPTNKTFITTYGSGMKGFAYDVTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 179

Db 121 SGLTQKTFSTYGGSTKGFAYDVTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 180

Qy 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQKQEGSVVFMFGVDHGYKGLNWIPLI 239

Db 181 PDMSFITTIPIFDNLKNOGAISEPVFAFYLSKNQKQEGSVVFMFGVDHGYKGLNWIPLI 238

Qy 240 EAGEWRVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPRFDKHY 299

Db 239 QAGEWVHMDRISMKRTVIACSGCEALVHTGTHIEGPGRLVNNIHLIRTPRFDKHY 298

Qy 300 VSCFATKYLPSITFTINGIKYPMATARAYIFKDSGRGCYSAFKENTVTSRETWILGDAFL 359

Db 299 ISCFATKYLPSITFTINGINIPVPARAYIHKDSRGHCYPTFKENTVTSRETWILGDAFL 358

Qy 360 RRYFSVDFRGNDRIGLARAV 377

Db 359 RLYFSVDFRGNDRIGLARAV 376

RESULT 15

PCT-US02-37236A-27

; Sequence 27, Application PC/TUS0237236A

; GENERAL INFORMATION:

; APPLICANT: Lucy, Matthew C.

; APPLICANT: Mathialagan, Nagappan

; TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS

; FILE REFERENCE: UVM0019W0

; CURRENT APPLICATION NUMBER: PCT/US02/37236A

; CURRENT FILING DATE: 2002-11-20

; PRIOR FILING DATE: 60/331,822

; NUMBER OF SEQ ID NOS: 56

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 27

; LENGTH: 380

; TYPE: PRT

; ORGANISM: bovidae

PCT-US02-37236A-27

Query Match

Best Local Similarity 69.1%; Score 1388.5; DB 1; Length 380;

Matches 270; Conservative 36; Mismatches 73; Indels 1; Gaps 1;

Qy 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Db 1 MKWIVLLGLVAFSECVKIPLRQVKTMRKTLGKGNLKNFLKEHPYRLSQISFRGSNLTI 60

Qy 61 HPLRNIMLVYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 119

Db 61 HPLRNIRDFYVGNITIGTPPQEFQVVDFTGSSDLWVPS-FCMPACSAAPVWFRLQSSST 120

Qy 120 FQPTNKTFITTYGSGMKGFAYDVTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 179

Db 121 FRUSRTFTSYGSGRIEALVHDTVRIGDLVSTQDPFGLSVVEYGLEGRNYDGVGLNY 180

Qy 180 PNISFSGAIPFDNLKNOGAISEPVFAFYLSKNQKQEGSVVFMFGVDHGYKGLNWIPLI 239

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Db 181 TNISPSGAIFIFYLKNEGAISEPVFAFYLSKDEREGSVWFGGADHRYKGCNLNWIPLM 240
QY 240 EAGEWRYVHMDRISMRTVVIACSDGCEALVHTGTSHIEGPGRLVNNIHRLIETRPFDKHY 299
Db 241 KAGDWSVHMDRISMRTVVIACSGCKALVDGTSSDIVGPSTLVNNIWKLIIGATPGSEHY 300
QY 300 VSCFATKYLPSITFIINGIKYPMPTARAYIFKDSRCRCYSAFKENTVTRTSRETWILGDAFL 359
Db 301 VSCSAVNSLPSIITFTIKSNRYRVPQAYILKDSRCRCFTAFKGHQSSSTEMWILGDVFL 360
QY 360 RYFVSFDRGNDRIGLARAV 379
Db 361 RLYFVSFDRRKRDRIGLATKY 380
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Search completed: April 2, 2003, 17:51:24
Job time : 33 secs